ALABAMA

Proves Indifferent Market

Birmingham, Ala.—Quick-frozen foods are comparatively unknown in Birmingham, a survey by an ELECTRIC REFRIGERATION NEWS correspondent here revealed. There are a few stores selling them and most of these are chains. Not a single independent store was found that admitted much knowledge of quick-frozen foods. Some of them had heard a little bit about frosted and quick-frozen foods, but it was indeed a very little.

The butcher in one meat department of a large chain declared that he was selling some of the new product. He could not report much comment on the part of customers. He added that a few had spoken of the frozen meats favorably, declaring that there seemed to be a different flavor that gave the meat a delicious taste.

"I don't recall of a single complaint against them, though," he said.

Meat products are perhaps the only variety of quick frozen foods on the market here. Sales lead in pork considerably ahead of other meats.

Just what effect the hot summer weather will have it yet to be seen. No merchant would express himself on it, due to inexperience in dispensing the product when the thermometer hovers about one hundred degrees. That doesn't mean, however, that they are uninterested. It does mean, however, that merchants are very conservative about putting in a line of quick frozen foods.

The south, as every knows, is noted for its cooking. The people down here want fresh stuff. They have been raised that way from days spent during childhood on farms and plantations. Only time will tell as to how they will take to quick-frozen foods.

At Montgomery, Ala., The Alabama Utilities Company gave demonstrations in the lobby of its office on quick-frozen foods and their preparation. This is one of the first of such demonstrations given in Alabama.

SOUTH DAKOTA

Packer to Serve Large Area

Mitchell, S. Dak.—Two new ice meat trucks for use in distribution of the products of the Erion Packing Company of Mitchell, have just been put into service, according to Homer Erion, president of the company. The larger of the two is a 3-4 ton capacity truck. It will serve eighty towns in South Dakota and will cover 1,000 miles weekly on a regular run. The other truck will be used similarly but on a shorter run and in the city.

Both are of a type designed by a subsidiary of the Hormel Packing Company, and include the latest features in this type of transportation. The walls, roof and floor of the compartment in which the meat is carried are insulated with a new composition material. The interior is finished in oil, and is in no way connected with any other part of the truck. Both trucks are attractively finished in pure white with a new type of oil paint.

PROTECTION

Milwaukee, Wis.—One hundred new refrigerator cars, representing an investment of $300,000, are being put into service by the Union Refrigerator Transit Co., serving Milwaukee and Wisconsin territories, it was announced by Cyrus L. Phillipp, vice-president.

Delivery of twenty-five of the new cars has already been made by the General American Tank Car Corporation at Chicago, of which the Union Refrigerator Transit Co. is a subsidiary. The others will be ready within a week or two, it was said. Increased Wisconsin dairy, poultry and other farm shipments are reported by Mr. Phillipp.

The Union Refrigerator Transit Co. cars transport Wisconsin farm products all over the country through connections with the Milwaukee railroad, the Soo Line, the Chicago and Great Western and other lines.

With the addition of the one hundred new cars, the company this year will have 5,000 cars comprising its service in transportation of perishable products, Mr. Phillipp said.

PACKER AND DISTRIBUTOR CO-OPERATE

Tulsa, Okla.—Interest in quick frozen meats was stimulated here sometime ago by the Ahrens Refrigerator Co., General Electric refrigerator distributors. Identifiable cuts and packaged merchandise supplied by the Swift branch in Tulsa were displayed in a General Electric Model C-600 refrigerator. The big commercial job was well filled with goods.

South Carolina Chain Stores Use Refrigerated Display Cases

THE Southern Pacific Utilities Co. at Greenville, S. C., recently placed Kelvinator equipment in one of the Sands & Co. chain stores, well known in the south, twelve of which are Kelvinator equipped.

The equipment consists of two W. B., 16 V coils in counters, one 19 V coil in grocery box, hooked-in multiple on one Kelvinator compressor. The two large coils can be easily seen at the ends of the case and patrons are quick to note that mechanical refrigeration protects the perishables that they purchase in Sands store. Covered with frost the coils present the typical atmosphere.

The McCray case that is operating with the Kelvinator equipment in this particular job of keeping the food commodities in good condition has good display facilities. Large quantities of perishables may be kept on display and customers can easily look over the products through the heavy panes of glass at the top and front. The case, finished in oak, matches the remainder of the fixtures in the store.

This practical SEALED SLAB

reduces labor costs..increases the efficiency of Mechanical Refrigeration

Easy to put in place—because it combines the advantages of both flexible and rigid insulation. Handles quickly—rigid enough for fast work, yet flexible enough to fit snug and tight!

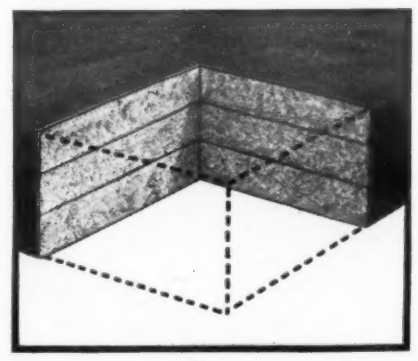
These Balsam-Wool Sealed Slabs are built up to required thickness with layers of Balsam-Wool Blanket—positive assurance that each is completely filled with a *permanent,* non-settling, highly efficient insulation.

They are made to meet your own specifications for width, length, thickness. Thus they end patchwork and the hazard of imperfect sealing. They reduce labor costs!

Highly efficient, their average thermal conductivity does not exceed .25 B.t.u. per square foot, per hour, per one-inch thickness, per one degree Fahrenheit difference in temperature.

Durable! Carefully sealed against moisture. Sanitary, vermin-proof, odorless. Economical.

Examine one of these *perfected* slabs. Write our nearest sales office and a Sealed Slab will be sent you free.



Notice the construction of the Sealed Slab shown at the left. A firm edge extends completely around the slab. This enables workmen to seal these semi-rigid slabs to the refrigerator frames as is usually done with rigid insulation

WOOD CONVERSION COMPANY

Mills at Cloquet, Minnesota

Industrial Sales Offices

Chicago, 360 No. Michigan Ave.

New York, 3107 Chanin Bldg. Detroit, 3084 West Grand Blvd.

Manufacturers of Balsam-Wool Insulation for Domestic Refrigerators, Motor Buses and Airplanes; Balsam-Wool Refrigerator Car Insulation and Steel Passenger Car Insulation; Balsam-Wool Standard Building Insulation and Nu-Wood Insulating Board; Balsam-Wool Acoustical Blanket

LOUISIANA

Tries Quick-Frozen Fish

Shreveport, La.—The development of a market for quick-frozen foods is in prospect for the immediate future in this section of Louisiana and neighboring territory, according to local distributors.

A big shipment of this type of product arrived in Shreveport on May 8, consisting of a carload of Nordic fillet of haddock consigned to the Hicks Company, Ltd., wholesale grocers. This shipment was from the Atlantic Coast Fisheries and was made in an iceless car.

This consignment of fish was distributed in Shreveport and adjacent territory through grocery stores. The refrigeration method made it possible for the temperature of the shipping car to be lowered to 15 degrees and kept at that point for seven or eight days without interruption. Inasmuch as this was the first large shipment to this territory in which the quick-frozen food idea was featured, considerable publicity was obtained locally and the interest became widespread.

Although Swift & Company, and possibly other packers, have made small shipments of meats for some time, consisting of chops, lamb cuts, beef liver, chicken and veal cutlets, the development of the quick-frozen food market has so far been retarded through the reticence of retail meat dealers to handle this type of product. The development of the market is said to be only a matter of education on the part of distributors, for past experience has demonstrated that patronage is not lacking in this particular field.

The reticence of retail dealers is reported to be caused through their belief that the quick-frozen food market will interfere with and possibly destroy their trade in other lines, and also because of the fact that they are not at this time fully equipped to handle quick-frozen products. With the growth of the idea larger distributors are confident that this situation can be overcome.

SERVING

Pantries Popular in Big Hotels

New York, N. Y.—"Hotels today are taking a great interest in the equipment of serving pantries in conjunction with their suites. They are finding them a great advantage in the competition with apartment hotels that has been growing so keen recently. More and more, they are realizing what an important and convincing point a serving pantry is to a prospective hotel tenant."

Such is the opinion of Henry Miserocchi, apartment house specialist with Rex Cole, Inc., who recently closed three contracts for the installation of General Electric refrigerators in the serving pantries at the Hotel Wellington, Fifty-fifth St. and Seventh Ave.; the New Weston Hotel, at Madison Ave. and Fiftieth St., and at the Hotel Chatham, at Forty-eighth St. and Vanderbilt Ave., all in New York City.

Sixty-five machines have already been delivered. The favored models for these installations are the S-D40 and the G-40.

A use for electric refrigerators that promises to grow in popularity is pointed out by these installations. This is a new phase of the hotel field and unlimited possibilities are suggested by the opening made by General Electric installations here.

The Wellington Hotel, owned and operated by the Knott Hotels Corporation, was designed by Robert T. Lyons, architect. Building exigency required that the pantry be located adjacent to the sleeping rooms. Eighteen SD-40's were installed.

The pantries at the New Weston Hotel, which is owned and operated by the same corporation, are more spacious, and the G-40 was the model chosen for this building. Thirty-five have been already installed.

A note of luxury has been introduced into the Hotel Chatham, where it is estimated that between twelve and fifteen hundred dollars have been spent in completing the pantries. Twelve G-40 General Electric refrigerators have been placed there.

TEXAS MERCHANT INSTALLS FREEZER COUNTER

Amarillo, Tex.—The Public Market, owned by John Novakovich, which opened May 10 on Fifth and Taylor Sts., has fifteen feet of refrigerating cases, installed by Ed. Frierich, manufacturer of freezer counters and coolers, San Antonio, Texas. Mr. Novakovich will receive quick-frozen live caught haddock from the North Atlantic Coast in carload lots, and will handle other products received in the quick-frozen state.

In Two Parts—Part 1

ELECTRIC REFRIGERATION NEWS

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The business newspaper of the refrigeration industry

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FRIGIDAIRE LEADERS IN 1929 CAMPAIGN GAIN THEIR REWARD

Visit Dayton and Are Guests at Indianapolis Race

Dayton, Ohio—The Frigidaire B. T. U. Club, five hundred strong, invaded Dayton on Thursday, May 29, as guests of the Frigidaire Corporation. The men who came were the top notchers of the B. T. U. Club, the select group that, during 1929, sold 125 per cent of their quotas, winning as a reward the trip to Dayton. They spent all of Thursday in Dayton, visiting both Frigidaire plants, attended a dinner at the Miami Hotel in the evening, and on Friday turned up bright and early in Indianapolis, where they witnessed the great victory of Billy Arnold in the five-hundred-mile motor race on the Speedway.

From the time they left their homes in every section of the country until they returned, the star salesmen were Frigidaire guests in the full sense of the word. So far as they were concerned, there were no expenses. The reception committee attended to details with a machine-like efficiency that slipped a cog in only one instance, and that wasn't the committee's fault. The big special train from New York, containing Winston Paul, New York distributor, and his cohorts, was to have been met at Springfield, Ohio, by L. E. Gilbert. Taking with him all of the tickets, badges and other credentials of the New York group, Mr. Gilbert drove over to Springfield in his car, arriving there twenty minutes before the special was due. Upon making inquiries as to whether or not the train was on time, he found that it wasn't—it had passed through Springfield about ten minutes before. Hopping back into his car, he emulated the drivers in the next day's race, and pulled into the Dayton station before the waiting men had become restless enough to resort to violence. Mr. Paul greeted him with relief, the credentials were distributed, and the New Yorkers made their way to the Van Cleve Hotel. They joined the throng at the Van Cleve a few minutes before the trip to Plant 1 was scheduled to begin, and Gilbert's gallant ride became a part of Frigidaire history.

Guides from the factory organization took the visitors through the plant in groups of eight or ten. This made it possible to explain details of the various operations and to give the salesmen an opportunity to ask questions to their hearts' content, a privilege of which most of them took full advantage.

Just before noon the men left Plant 1 and made the trip to Plant 2 at Moraine City in a fleet of chartered trolleys. They arrived in time to eat luncheon at the plant cafeteria before undertaking the long trip through the factory. They inspected every foot of the big plant, watched the porcelain ovens, the construction of the cabinets, the installation of the mechanical units made at Plant 1, and the finished product being packed for shipment. At every point on the long assembly line there was a little group of men with blue badges watching the various operations. A few of the men found their way into the experimental kitchen over which Miss Verna L. Miller, home economist, presides, and she spent a busy afternoon answering questions.

The return to Dayton was made about four o'clock, leaving a couple of hours

(Continued on Page 2, Column 4)

REFRIGERATOR HARD HIT BY AUSTRALIAN TARIFF

THE exportation of American-made refrigerators to Australia is not being encouraged by the Australian Government at the present time. Up to a month or two ago the duty on refrigerators and parts under tariff item 176 was 60 per cent ad valorem. On April 4, a new rate went into effect, a special duty of 50 per cent of the ordinary tariff rate being added. This makes the existing rate on refrigerators and parts a mere 90 per cent ad valorem.

By the provisions of the act which took effect April 4, a large number of articles were placed on a special list and are not permitted to be imported into Australia at all. Refrigerators were not included on this prohibited list, but the 90 per cent duty will go a long way toward accomplishing the same end.

Information in regard to Australian duties may be obtained from G. H. Tindale, Australian Customs Representative, 25 Broadway, New York.

Code Amendments Considered

New York, N. Y.—Proposed amendments to New York's regulations in regard to refrigeration were discussed at a public hearing before the Board of Aldermen on May 28. The discussion centered chiefly around a clause that would make the present code retroactive, that is, to apply its restrictions to installations made before December 13, 1927.

C. K. Michaels, engineer for the Fire Departments, opposed practically all of

(Concluded on Page 12, Column 5)

TWO ORDINANCES BEFORE CHICAGO COUNCIL

Chicago, Ill., June 4—Two safety ordinances were reported to the City Council today. At a meeting of the committee on public health held last month, what has been properly known as the Gearon ordinance, because it was backed by Gerald Gearon of the Boiler Department, was approved by the committee by a vote of eight to five, and therefore was presented to the council today as the majority report.

The minority, read by Alderman John A. Massen, presented a second ordinance to the council, which provides that the regulation of industrial and commercial installations be placed in the hands of the boiler department, and that the health department have jurisdiction over domestic installations. This ordinance presented by the minority is approved by Dr. Arnold H. Kegel, health commissioner. It follows in many respects the safety code recently approved by the American Society of Refrigerating Engineers, including the clause in that code which requires a type of construction in dwellings that will insure that not more than three pounds of refrigerant can escape in a period of eight hours from a break in any part of the system. The provision formerly supported by the minority provided that such escape be not more than two pounds in twelve hours.

The proposed code that the minority has up for consideration is in the nature of a compromise with the Boiler Department. Alderman Massen dwelled at length on the reasons why jurisdiction over domestic and apartment house installations should be left to the Health Department.

The council, after both majority and minority ordinances had been received, directed that they be published and taken up at the next meeting on June 18. The ordinances were not sent back to the committee for further hearing.

At the Helm

President Matthew S. Sloan, who will be at the helm at San Francisco.

Second in Command

Vice President William A. Jones, who is in line for the presidency.

PLANS FOR PRODUCTION ANNOUNCED BY GRUNOW

Chicago, Ill.—A statement made recently by William C. Grunow, president of the Grigsby-Grunow Company, and vice-president of the Majestic Household Corporation, the affiliated company that will make electric refrigerators, sets July as the time when production of refrigerators will begin. Mr. Grunow's statement was made in connection with an announcement of plans for increasing production of radios immediately and employing 10,000 additional workers.

That portion of the announcement dealing with the production of refrigerators says that the Majestic Household Utilities Corporation, affiliate of Grigsby-Grunow, will begin production of its refrigerator in July. A force of 5,000 people will be employed, with an initial payroll of about $1,000,000 monthly.

In regard to general business conditions, Mr. Grunow said: "The soundness of American business structures has been tested thoroughly in the past, and it is only a question of time until it recovers its equilibrium and the business of the country again assumes its upward course.

"The purchasing power of the country has not been impaired."

BOSTON DEALERS LISTEN TO YOUNG OF MAJESTIC

Boston, Mass.—Herbert E. Young, vice-president in charge of sales of Grigsby-Grunow Company, which recently announced the new Majestic Electric Refrigerator, was the principal speaker at a meeting at Majestic Distributors, Inc., here. Mr. Young spoke of New England plans for distribution of the new electric refrigerator as follows:

"Majestic Distributors, Inc., Boston, Mass.; Hartford, Conn., and Portland, Me., have been appointed distributors for the new Majestic Electric Refrigerator, manufactured by the Majestic Household Utility Corp., an affiliated company of the Grigsby-Grunow Company, radio manufacturers.

"New factories for the manufacture of this product have been completed in Chicago. Manufacturing equipment, machinery, etc., is being installed as rapidly as received, and suppliers of this equipment in more than one instance are working day and night for the purpose of rushing equipment and machinery to Chicago as soon as possible.

"Majestic Household Utilities Corp. some time ago placed very substantial

(Concluded on Page 12, Column 5)

CODE FINDS APPROVAL AT HOT SPRINGS MEETING

Hot Springs, Va.—General policies, commercial problems and standardization were the main topics covered in the spring meeting of the National Electrical Manufacturers Association, which was held at the Homestead here May 16-23. A record attendance of 450 was registered, and fifty meetings were held by various sections, groups, divisions and committees.

The A. S. A. electric refrigeration code was approved by the Casualty and Fire Prevention Committee, which approval followed the majority vote of the Refrigeration Division, taken at a former meeting. The committee also expressed agreement with the National Fire Protection Association's decision May 14 that the brochure on mechanical refrigeration recently prepared by the committee on gases should be considered a progress report rather than a tentative standard.

RUTHENBERG'S REPORT MAKES PLEASANT READING

Mt. Clemens, Mich.—Unit orders received by Copeland Products, Inc., electric refrigeration manufacturers, during the first three weeks of May were 135% greater than those in the entire month of May, 1929, according to President Louis Ruthenburg. Shipments in the same period were greater than in any previous complete month.

Copeland will enter June with almost as many unfilled orders as on May 1, despite the heavy May shipments, and according to President Ruthenburg prospects are that June sales will be well sustained.

Copeland's remarkable May business follows a record-breaking first quarter in which progressively large increases were reported for each month over the corresponding period of 1929. Unit orders during the quarter were 40% greater than in the like period last year, while those in April were 42% higher than in April, 1929.

"This unusual demand," President Ruthenburg declared, "can be credited for the most part to two factors—the new Copeland features incorporated in the 1930 line of self-contained household units, and the new efficiency records established by Copeland commercial equipment installed in meat markets, grocery stores, restaurants, etc.

"The outlook for the summer months is especially favorable, inasmuch as demand for commercial equipment promises to continue its rapid increase."

CALIFORNIA WAITING WITH WARM WELCOME FOR N.E.L.A. VISITORS

Special Trains Already on Way to San Francisco Meeting

San Francisco, Calif.—Everything is in readiness here for the big fifty-third annual convention of the National Electric Light Association, which convenes here during the week of June 16-20. The convention atmosphere is all ready starting to pervade the city which will welcome the four thousand or more delegates.

The Red Special which steamed out of New York City on May 31 is leading the procession west. About 200 members took advantage of this all-expense tour which covers approximately one month. This train will stop at a number of large cities where the delegates will be feted by the local power companies. It will arrive in San Francisco the day before the convention opens. Three other fast trains will carry large numbers of conventioneers westward, one leaving Chicago on June 6, another New York City on June 12, and another Chicago on June 13. Reservations for these trains have been quite heavy and several have full capacities arranged for.

Officially the convention will get under way on Tuesday morning at the first general session, at which Matthew S. Sloan, president of the N. E. L. A., will preside. At this session Mr. Sloan will make the presidential address. General sessions will be also held on Wednesday, Thursday and Friday mornings. Tuesday afternoon will be given over to the Accounting Section session, while the Commercial session will hold the interest of the delegates on Wednesday afternoon. Frank D. Pembleton, chairman of the Merchandising Bureau, will make his report at this meeting. It is expected that refrigeration will occupy a prominent place on the commercial program. Last year at the convention in Atlantic City, the National Food Preservation Contest was announced.

At this session Martin J. Insull, president of the Middle West Utilities Company, will speak on "Load Building Opportunities Ahead of Us," and V. H. Moon, merchandise manager of the Pacific Power & Light Company, will have as his topic, "Planning Your Merchandising Program for the Year." A number of other subjects of paramount interest to the commercial managers will be taken up at this time. The Public Relations Section will hold its session on Thursday afternoon.

There will be no manufacturers' exhibits at the convention this year. Most of the sessions will be held in the Civic Auditorium, which will be the official headquarters of the utility men during their stay in San Francisco.

KELVINATOR SHIPMENTS GREATEST IN HISTORY

Detroit, Mich.—Kelvinator shipments during the month of May were the greatest in the history of the company, according to H. W. Burritt, vice-president in charge of sales.

"March was the biggest month in shipments in Kelvinator history. April shipments greatly exceeded those of March, again establishing a record. May shipments exceeded both March and April and were 36% over those of May, 1929, making it the greatest month of shipments in the whole history of the Kelvinator Corporation," said Mr. Burritt.

"Kelvinator domestic sales during the past month have eclipsed all expectations, but along with this record is a great volume of ice cream cabinet sales, commercial equipment for stores, water cooling equipment for offices and factories, and a very substantial increase in export business, all of which combined made May the record Kelvinator business month.

"Many factors have contributed to the continued upward trend of Kelvinator business, month by month. National advertising has been vigorous, the distributing organization has been alert to take full advantage of the favorable impression created by the new line of domestic cabinets, with automatic fast freezing and other features which have strongly appealed to investors in electric refrigerators.

"The nation-wide fast freezing test of March, culminating in the average freezing time, water to ice in less than eighty minutes, stimulated interests in Kelvinator and resulted in increased sales."

NOW MAY BECOMES *the Greatest Month* in Kelvinator History

Eclipses Even March and April . . . Both Record Months

•

MARCH was a record month for Kelvinator—the greatest in Kelvinator's history. Then came April with shipments exceeding March. And now May eclipses *both* March and April, establishing a new record as the greatest month in Kelvinator's 16 years of manufacturing.

To electric refrigeration dealers, these facts carry especial significance. They mean that the new Kelvinators, offering four *automatic* refrigeration services, are actually swaying thousands of buyers to Kelvinator against the field.

A greatly augmented advertising program, broadcasting to the whole nation the superiorities of Kelvinator—the fact that Kelvinator gives *world's fastest freezing*—and that Kelvinator is the *only* refrigerator giving *automatic* 4-Way Cold—all unite to give a new value to the Kelvinator franchise.

Complete information on the Super-Automatic Kelvinators, in three price ranges, is available on request.

These Exclusive Kelvinator Features are Winning Prospects Against the Field

1 *Wholly Automatic Operation*—Four refrigeration services in a single refrigerator—each automatic and independent of the others.

2 *Automatic Super-Fast Freezing*—the World's Fastest Freezing—Kelvinator's exclusive device—Iso-Thermic Tubes—gives the fastest freezing on record for a domestic refrigerator.

3 *Cold Storage Compartment*—Kelvinator provides a special cold storage compartment with *below-freezing cold* for keeping all the new frozen and frosted foods, as well as fresh meats, fruits, vegetables, game and fish.

4 *Greater Ice Capacity*—Size for size, the de luxe Kelvinators have a greater ice capacity than any other electric refrigerator.

KELVINATOR SALES CORPORATION, DETROIT, MICHIGAN
KELVINATOR OF CANADA, LIMITED, LONDON, ONTARIO
KELVINATOR LIMITED, LONDON, ENGLAND

Speed Merchants

The Record Breaking Frigidaire Salesmen Watch the Race at Indianapolis

FRIGIDAIRE LEADERS

(Continued from Page 1, Column 1)

for rest and recreation before dinner. Judging by reports, not all of them rested, for the salesmen of the other competing refrigerator companies which are represented in Dayton say that they spent two busy hours demonstrating their products to highly interested strangers with Southern and Yankee accents, and failed to make a single sale as the result of their hard work.

The dinner at the Miami was an enthusiastic success. The chairman and toastmaster was J. A. Harlan, sales manager. At least, he began the evening as J. A. Harlan, sales manager, but before the speaking was over discovered that he was J. A. Harlan, vice-president in charge of sales. His promotion, which was announced by President E. G. Biechler, came to Mr. Harlan as a bolt from the blue. Mr. Biechler had returned in the morning from New York, where the decision was made, and had purposely kept quiet about it all day in order to treat the popular new vice-president to a pleasant surprise.

Mrs. Elizabeth Stone MacDonald, head of home economics for Frigidaire, led the list of speakers. Her assertion that "the idea of electric refrigeration is accepted" and that henceforth sales will depend upon the efficiency of the machine sold, met with the outspoken approval of the quota busters.

Strickland Gillilan, of Washington, D. C., lecturer and humorist, was then introduced and spoke in a humorous vein on a number of phases of modern life, paying particular attention to conditions in the national capital.

He was followed by C. F. Kettering, vice-president of General Motors in charge of research. Mr. Kettering pointed out and emphasized the fact that the individual Frigidaire salesman has the vast strength and prestige of General Motors behind him. He gave the men some excellent advice in regard to salesmanship, saying that the character of the first complaint after a refrigerator has been installed determines whether or not the sale was properly made. If the customer takes delight in complaining, it means that the salesman did not do a good job, but if the customer makes his complaint with obvious regret, it is reasonably certain that the sale was made correctly.

President Biechler was next on the list and was received with enthusiastic applause. He spoke earnestly and at length on certain phases of Frigidaire's problems, making his entire speech a heart-to-heart family discussion. He reviewed the splendid progress made thus far in 1930, and predicted even greater progress during the remainder of the year. During his speech he announced Mr. Harlan's appointment as vice-president, and also the appointment as a vice-president of E. R. Godfrey, who will hold the position of works manager. Mr. Godfrey was introduced and made a few brief remarks.

Frank Gould, of Reading, Pennsylvania, came in for a good deal of glory during the evening when he was introduced as the first Frigidaire salesman to qualify for the trip to Dayton a year from now. He was the first man to qualify last year and has already passed the 125 per cent mark for 1930. "Give him some of my quota to work on," shouted one of the boys from the corner of the big room when Mr. Gould's remarkable record was announced.

Mrs. D. Elizabeth Butler, of Minneapolis, the only woman present who had earned the trip to Dayton, also was introduced. Mrs. F. M. Wright, of Oklahoma City, also earned the honor, but was unable to make the trip.

Another notable salesman in the big group was George E. Marsh, of Sacramento, California. About two months ago Mr. Marsh broke his knee in a fall, and is still on crutches. He decided that he wasn't going to miss the trip to Dayton, so he came along, crutches and all. He saw both plants from a wheel chair,

(Concluded on Page 4, Column 4)

The Canadian Contingent at Dayton

ACME REFRIGERATION CO.
210 BEDFORD AVENUE

TO Mr. Refrigerator Owner DATE June 4th
ADDRESS 2110 Jerome Ave.

For service on your General Electric Refrigerator
1927
1928
1929
1930

$0.00

One bill he's never delivered!

Never—during the year 1927—or 1928 or 1929—or 1930—never during the years that the General Electric Refrigerator has been on the market—has he delivered a single bill for servicing a General Electric Refrigerator.

The public utilities and dealers who sell such satisfactory merchandise should be popular with their customers. Their trade grows rapidly, because their customers boost. Purchasers of General Electric Refrigerators are proud to tell their friends that they own the refrigerator so efficient, so dependable and trouble-free that they never have had to pay a single service bill.

The volume of General Electric Refrigerator business has grown sensationally—but never has there been a sales volume that even approached the volume in 1930!—And is it surprising?

GENERAL ELECTRIC
ALL-STEEL REFRIGERATOR

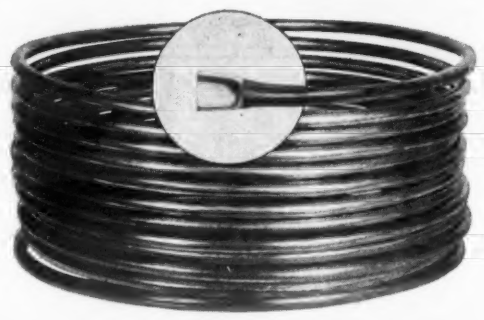
ELECTRIC WATER COOLERS COMMERCIAL REFRIGERATORS ELECTRIC MILK COOLERS

ELECTRIC REFRIGERATION DEPARTMENT OF GENERAL ELECTRIC COMPANY, HANNA BUILDING, CLEVELAND, OHIO

NO OWNER HAS PAID FOR SERVICE *one cent*

DEHYDRATED WOLVERINE SEAMLESS COPPER TUBING

Highest quality seamless copper tubing—perfectly dehydrated and solder-sealed—made to A. S. T. M. Specifications (B 68-27T)—ready for quick installation. Send your production requirements for quotations—or wire for rush shipment from stock.



WOLVERINE TUBE CO.

SEAMLESS COPPER BRASS & ALUMINUM

1431 Central Ave. Detroit, Mich.

Phone Cedar 5000

Sales offices in all major cities. Write or phone for name of nearest representative.

Servel Distributors Active

The Boston Meeting Was Attended By An Enthusiastic Crowd of Dealers.

SALES meetings, conducted by V. E. Vining, sales manager, and Paul Jones, educational director, were held during May for recently appointed Servel distributors in Boston, Birmingham, Tulsa and Oklahoma City.

In Boston, the Appliance Engineering Co. is a new organization headed by E. A. Terhune, formerly of the C. C. Harvey Co. of that city.

Louis Pizitz Dry Goods Company of Birmingham, known through the south as "Pizitz," is distributing Servel through a large portion of the state. Pizitz is an old company, which has served its customers for many years.

At Oklahoma City and Tulsa, the Spurrier Lumber Company was awarded the Servel franchise. Spurrier is likewise a state-wide organization, one of those which in recent years has added specialties to round out its complete service available to the home owner in that territory.

EARL LINES SPEAKS TO SALES MANAGERS

St. Louis, Mo.—Earl Lines, director of advertising for the Kelvinator Corporation, was the principal speaker at a meeting of the Sales Managers Bureau of the Chamber of Commerce, St. Louis, on May 9. His subject was "Trends and Tendencies in Merchandising," in which he told, among other things, how business volume was doubled last year, and the part that energetic, sound sales promotion methods played in making it the greatest year in Kelvinator history.

Mr. Lines was presented by the Sales Managers' Bureau with a beautiful bronze medal, an exact replica of the one given Colonel Charles A. Lindbergh to commemorate his memorable New York-Paris flight.

IMMIGRATION OFFICE BUYS REFRIGERATOR

Seattle, Wash.—Government award has been made for Kelvinator electric refrigeration in the new immigration and detention station being constructed by the government at Seattle, through the Standard Furniture Company at Seattle, Kelvinator distributors. Cabinets which will be manufactured locally will house the new Kelvinator equipment, which will be installed this fall, when the immigration station will be completed.

NEW SERVEL ORGANIZATION IN ST. LOUIS

St. Louis, Mo.—Central States Distributors, Inc., a new company, has been organized to distribute Servel commercial and domestic equipment.

New display rooms have been opened at Delmar and Skinker, with plans ready for additional stores in other sections of the city.

WALKER CO. HOST TO 135 DEALERS

Toledo, Ohio—More than 135 dealers from 32 counties in Ohio, Michigan and Indiana attended the all-day meeting sponsored by the E. H. Walker Co., distributors of Frigidaire in this territory, at the Commodore Perry Hotel, Toledo, recently.

It was the opening gun in a special campaign in this section in which Mr. Walker, president of the firm, announced prizes to groups of winners and trips to Dayton to visit the Frigidaire factories. The meeting also marked the launching here of the great Frigidaire campaign in which more than $1,000,000 will be spent in newspaper advertising.

Others who addressed the dealers were Otto C. Endress, zone manager; J. G. Harris, sales engineer, and E. F. Moore, educational department, all of Dayton.

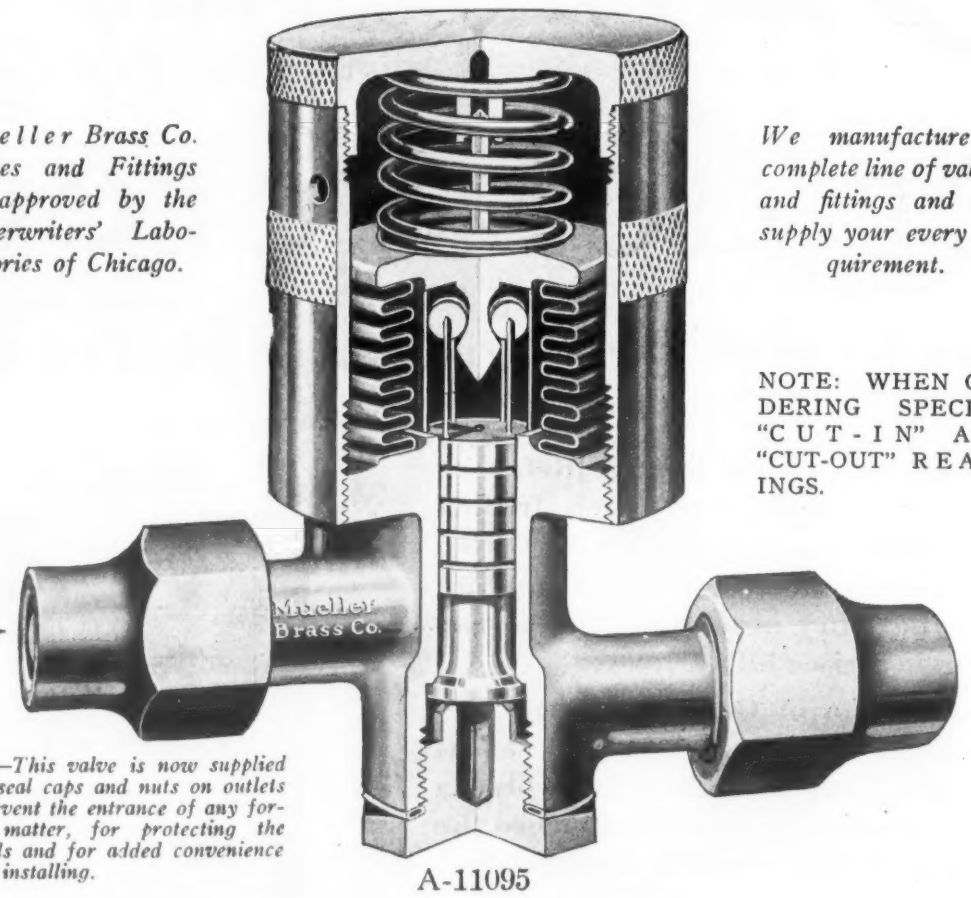
During the afternoon the factory executives showed the dealers an entirely new system of demonstration and also explained the new multicold Frigidaire which permits different graduations of temperature in a single refrigeration unit along with the cold control and hydrator. A banquet in the evening concluded the day's session.

J. D. MOORE GOES TO WESTINGHOUSE

Mansfield, Ohio—J. D. Moore, formerly with the General Electric refrigeration plant at Erie, Pa., has become associated with the Westinghouse Electric & Manufacturing Co., here.

MUELLER
Two-Temperature Control
SNAP VALVE

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago.



We manufacture a complete line of valves and fittings and can supply your every requirement.

NOTE: WHEN ORDERING SPECIFY "CUT-IN" AND "CUT-OUT" READINGS.

Note—This valve is now supplied with seal caps and nuts on outlets to prevent the entrance of any foreign matter, for protecting the threads and for added convenience when installing.

A-11095

This valve is so constructed as to make it a real aid to the service man. By merely turning the outside knurled case he can raise or lower the temperature without danger of losing the differential which was previously properly set.

The differential is built into the valve and cannot be changed.

The temperature range may be changed without the necessity of a recheck or numerous visits of the service man.

Simplicity of construction insures a long and trouble proof life.

The snap action feature prevents seat erosion and assures uniform performance.

The body is a brass forging, thus making it seep proof and free from defects.

Mueller Brass Co.

PORT HURON, MICHIGAN

THREE GENERATIONS OF BRASS MAKING

Leaders See Speed Classic

(Concluded from Page 2, Column 5)

and managed to hobble into the grandstand at the Speedway to watch the big race. When last seen he was sitting in a wheel chair in the Indianapolis station, cheerfully waiting for the train that was to take him back to California.

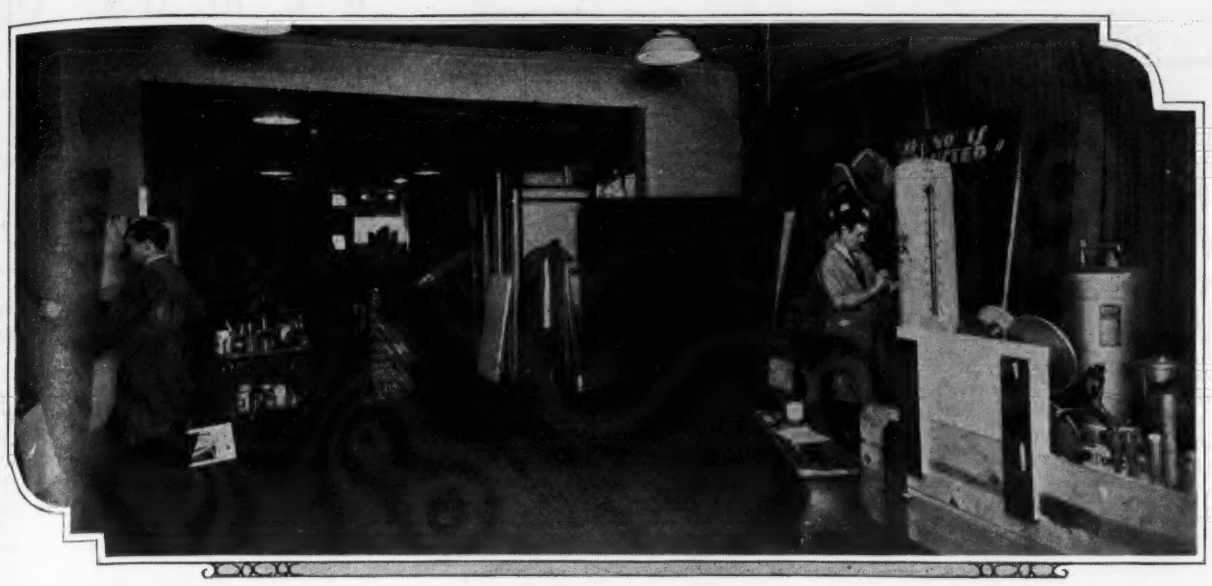
Another Californian, who felt that he had more than earned the trip, was F. H. Fackler, of Oakland. In order to make up for the time lost going to Dayton and returning, he announced that he was going to sell sixteen refrigerators in one week. He sold twenty-two, and set out for Dayton with a clear conscience.

The short trip to Indianapolis and the Speedway was made by rail, reservations having been made on special trains for the entire party. The New York men stayed right on the train that had brought them from New York, making it their home for the entire duration of the trip. The others went over to Indianapolis on another special. Breakfast was served on the trains, which were shunted on a siding near the Speedway. Three diners just outside the Speedway gates served luncheon to the Frigidaire men, and when the race was over they returned to their trains, which then proceeded to the Indianapolis station, where the big party dispersed.

Conditions for seeing the race were ideal, and every man of the five hundred went back home with pleasant recollections of a real party excellently managed from start to finish.

Homeward Bound After Two Busy Days

Window Displays Made to Order



The Central Hudson Gas & Electric Corp. makes window displays for dealers and other firms in its art studio at Poughkeepsie, N. Y.

CENTRAL HUDSON DROPS DIRECT MERCHANDISING

Poughkeepsie, N. Y.—In pursuance of its recently announced policy of eliminating the direct selling of merchandise, the Central Hudson Gas & Electric Company has surrendered its Frigidaire franchise and is co-operating with independent dealers throughout its territory in promoting the sale of electric refrigerators. Former Central Hudson refrigerator salesmen are being encouraged to ally themselves with progressive dealers, and in some cases these former salesmen have embarked in business for themselves with the full co-operation of their old company.

In Kingston, for example, four Central Hudson salesmen, Otis Atkins, Bertrand Bishop, Morton Finch and David Harris, have formed the Modern Electrical Company, Inc., and are selling Frigidaires. In Beacon, Francis J. Beatty has started in business for himself, and Ray Hudson, another Central Hudson man, is associated with him. Kenneth MacGhee is now the New Paltz Electric Supply Co.

During the intermediate stages of the withdrawal process, the Central Hudson Company will watch conditions closely, and will adjust itself to the necessities of the situation as they arise. The company's plan, as stated in its bulletin, is:

"The plan of the Central Hudson Gas & Electric Corporation in its electrical merchandising activities for 1930 is directed toward the building up of a group of electric merchandise dealers which will eventually produce a larger yearly volume of revenue building electrical merchandise sales than the company has been able to secure by its direct selling program in the past. It is expected that this group will also be able to take over the bulk of the servicing work now done by the company, although emergency service requests made by our customers will still be handled by the company.

"While the above plan contemplates the final elimination of direct selling by the company, it is necessary to go through an intermediate stage in order to hold up our present volume of sales. This intermediate stage will make use of company canvassers, supervisors, dealers and the company as follows:

I. *Company's Part*

1. To purchase the necessary appliances for our co-operative dealers.
2. Warehouse and distribute the appliances to our co-operative dealers.
3. General newspaper and direct by mail advertising, to form the backbone of a general advertising campaign, with which the co-operative dealers will tie in.
4. To assist in stimulating co-operative dealer sales.
5. In order to be sure that we get thorough coverage of our territory, and also to supply the information to keep our market records up to date and at the same time put us in a position to properly stimulate our co-operative dealers, we will keep canvassers in the field to systematically canvass our territory, approximately one canvasser for each 3,000 domestic meters.
6. To maintain the necessary Kardex record for the benefit of the dealers as well as ourselves.
7. To keep market analysis data up to date for the benefit of dealers and ourselves.
8. To supply emergency service for all of our customers on their request, this service to be billed at reasonable rates. This will make it economically possible for dealers to set up their own department to handle all service other than emergency calls.
9. The company will supervise the activity of the canvassers and render assistance to dealers through supervisors located in Poughkeepsie, Kingston and Newburgh, and one dividing his time between Catskill and Saugerties. These supervisors will be paid a small salary plus a bonus based upon the increase in our gas and electric revenue instead of on the number of appliances sold.

II. *Dealer's Part*

1. The selling of appliances.
2. To install or arrange for the installation of such appliances as he may sell.
3. To keep salesmen in the field working constantly on the sale of electrical appliances.
4. To carry out a certain amount of advertising, which should be co-ordinated with our general advertising program, this advertising to consist of both newspaper and direct-by-mail advertising.
5. To equip a service and parts department to render service.

"It is intended in developing the above plan to continue our present policy of mass merchandising by a group of dealers with company co-operation. At the same time this plan will in no sense throttle competition and it offers other dealers a clear field to build up the sale of competitive appliances, provided they do not wish to take part in the company's co-operative plan. Financing arrangements and other assistance available to dealers, such as the services of our Home Service Bureau, are still open to all outlets, whether or not they are co-operating directly in the company's sales plan.

"For the present we will continue to sell both small and large appliances on our own office floors and use the following set-up with our co-operating dealers handling refrigerators and electric ranges.

"Frigidaires will be sold through co-operating dealers at discounts depending upon the amount of sales effort put forth by the dealer. To qualify for the maximum discounts, a dealer must sell Frigidaires on the following basis:

1. Maintain a regular sales force operating in a definite territory.
2. Arrange for installation of all refrigerators sold and maintain a service department and stock service parts.
3. Agree to sell a definite quota for the territory covered by the dealer's salesmen.
4. The dealer will agree to do newspaper and direct mail advertising to any amount equal to 2% of the gross retail selling price of the merchandise.
5. The dealer must maintain a showroom with adequate display.

"Dealers meeting the above requirements will be quoted a discount of 27% from the factory f. o. b. price on Frigidaires, on carload orders placed with us for delivery direct to the dealer. On less than carload, the discount will be 20 and 1½ from the factory f. o. b. price, f. o. b. our nearest storeroom.

"Dealers buying in small quantities, who are not prepared to meet the above conditions, will be quoted the factory f. o. b. price less 5%, delivered at our warehouse."

DENTEL TAKES POST WITH NEW JERSEY UTILITY

Rutherford, N. J.—George K. Dental, formerly assistant buyer for the Briggs Mfg. Co., Detroit, is now refrigeration representative of the Public Service & Gas Co. Mr. Dentel was married recently before going east.

KETTLE WINS HARVARD ADVERTISING AWARD

Minneapolis, Minn.—T. H. Kettle, advertising manager of the Northern States Power Co., Kelvinator distributor, captured one of the coveted Harvard awards for 1929 and a $2,000 cash prize, for "Local Campaign for a Specific Product." A series of advertisements featuring what one cent would buy in electricity for household purposes won the honor. The advertisements were unique in composition and their typography was unusual.

SEEPAGE PROOF FORGED BRASS FITTINGS

"Built Right—to Stay Right"

The close granular structure of Commonwealth hot-forged fittings for automatic refrigeration insures seepage-proof connections.

A comparison of the various types of fittings under the microscope is contained in our complete fitting catalog, Number 36.

Commonwealth Brass fittings excel not only in granular structure, but in correctly machined threads and seats, as well as in careful inspection and packing.

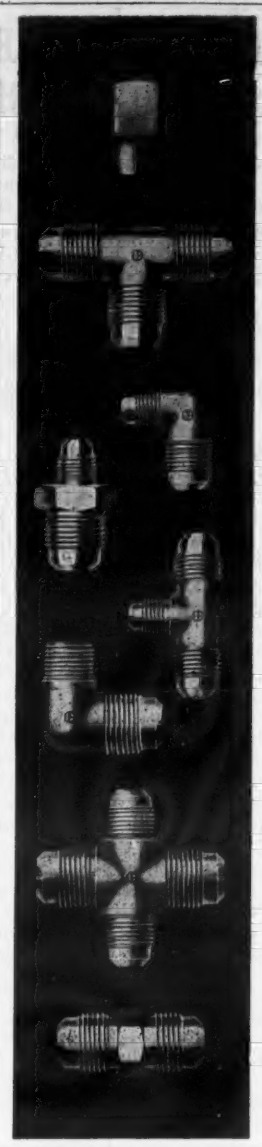
SEND FOR CATALOG No. 36

which describes the most complete line of tube fittings for the industry.

COMMONWEALTH BRASS CORPORATION

COMMONWEALTH AT G. T. R. R.

DETROIT, MICHIGAN



TOP QUALITY

Cabinet manufacturers value Monel Metal's durability

THE top of an ice cream cabinet must stand such hard use that it is only natural that the leading cabinet manufacturers have adopted durable Monel Metal.

These manufacturers realize that a cabinet top must have more durability...longer life...than any other part of the equipment.

Monel Metal, as a material for top and trim has many unique advantages. Probably the two most important are its lasting attractiveness and its remarkably long life in daily use.

This silvery Nickel alloy cannot rust. It resists corrosion ... it is not affected by food or fruit acids. It is easily cleaned and kept clean. Natural, therefore, that Monel Metal should have the eye-appeal that results from a neat and sanitary appearance.

Monel Metal is tough and strong as steel—it has no coating to chip, crack or wear off. The experience of thousands of users proves that these properties give Monel Metal tops remarkably long life.

Take advantage of Monel Metal's properties and the acceptance that has been created for Monel Metal through consistent, year by year advertising in both national and trade publications.

Illustration above shows an Ice Cream Cabinet with Monel Metal top.

Monel Metal is a technically controlled Nickel-Copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company. The name "Monel Metal" is a registered trade mark.

SEND FOR ICE CREAM CABINET LITERATURE

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N.Y.

ELECTROLUX SALES RISE IN CHICAGO TERRITORY

AN increase in sales of Electrolux refrigerators in the Chicago territory during the first quarter of 1930 of more than 300%, necessitated larger quarters for the Utility Appliance Corporation.

Since moving into the new quarters, two additional spaces have been taken adjoining the present suite for the use of the wholesale department. Branches have been established in Evanston and Oak Park, and another office from which the South Side business will be handled is to be opened shortly.

During the early months of 1929, the franchise for the distribution of Electrolux Refrigerators for the Chicago territory was acquired by the Heating & Appliance Corporation, which up until that time had merchandised a line of automatic oil burners exclusively.

After several months it became apparent to the management that the possibilities with the Electrolux refrigerator would make it advisable for the company to center its activities upon this product alone and in July, 1929, the Utility Appliance Corporation was organized for the exclusive sale and distribution of Electrolux refrigerators.

Just at the time when the new organization began to show results from its sale activities, the entire automatic refrigerator industry in Chicago was upset as the result of several accidents on multiple unit installations which received an undue amount of newspaper publicity.

Educational Campaign

An intensive, educational campaign in the Chicago papers and consistent work of the sales force, however, kept Electrolux sales on the increase during the weeks when the Chicago public was most skeptical as to the safety of all automatic refrigerators. When the agitation was at its peak one salesman closed the largest order which the company had taken in its short existence, a contract for two hundred and seven refrigerators.

Toward the close of the year, it became evident that larger quarters would be necessary for the anticipated increase in 1930, and on January 10, the Utility Appliance Corporation signed a long-term lease for space in the Lake-Michigan Building, at 180 North Michigan Avenue.

In franchising dealers in its territory, the Utility Appliance Corporation has adopted the policy of establishing only representative concerns who can and are willing to put forth a constructive sales activity and not confine selling to the mere display of a few models on the floor. In each suburb of Chicago there is now an Electrolux dealer whose previous business record has given him the confidence of the community which he serves.

In the territory franchised to Utility Appliance Corporation are the following public utilities, who function as dealers: Peoples Gas Light & Coke Co., North Shore Gas Co., and the Western United Gas & Electric Co.

Three supervisors who report directly to the general sales manager are responsible for the retail sales efforts in the three major districts into which the territory has been divided. The wholesale division has the direct supervision of the general sales manager. Sales meetings are held every Monday night at the general office at which attendance is required.

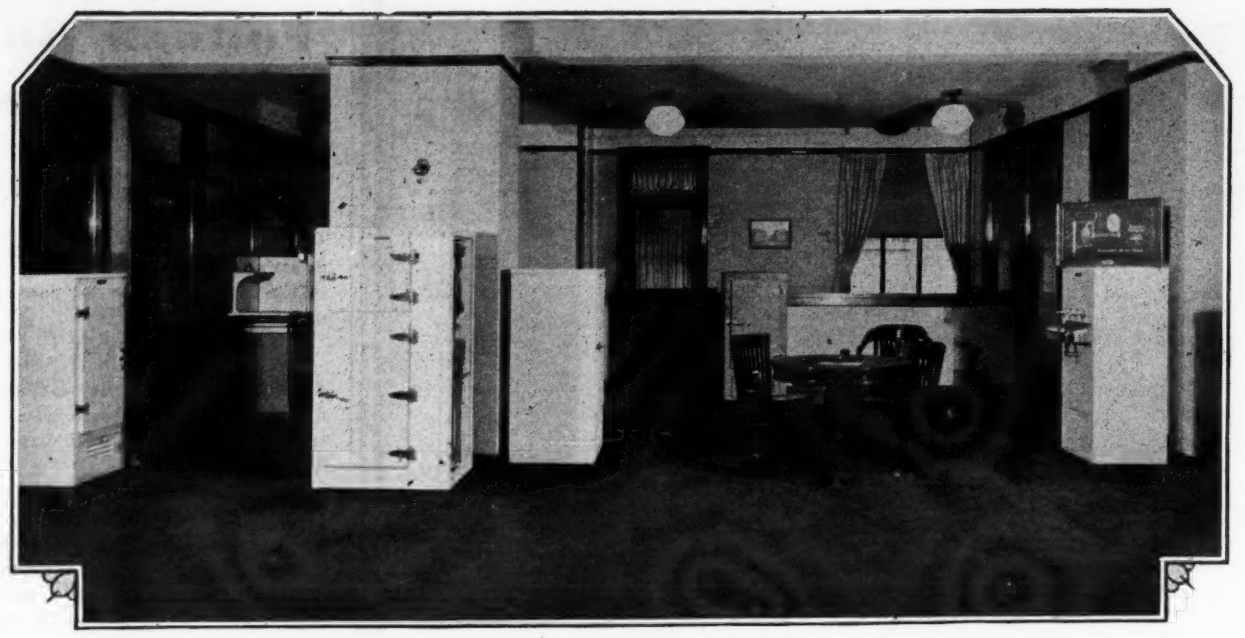
The management has partially met the problem of turnover in salesmen by making a study of the applicant's past performance and employing only such men whose records show they have been producers in their previous connections. The usual course of training is given to all new men and their effort during the first thirty days is closely supervised. This policy has resulted in the development of a sales personnel of which every man produces for the company and in turn for himself.

Activities to date this year, and the fact that the factory quotas have been met to date, have resulted in a definite commitment of more than 50,000 lines of advertising in the Chicago morning and evening dailies between May 1 and September 30. In addition to this display advertising, three prominent foreign language newspapers will be used during the same period.

Supplementing the literature which is available to all Electrolux dealers, the Utility Appliance Corporation has prepared several attractive mailing pieces with a particular appeal to the Chicago market. Photographs of Chicago installations, and testimonials from prominent architects and builders are included.

At the last meeting of the Board of Directors the following officers were re-elected for the ensuing year: John F. Ditzell, president; A. H. Kessler, vice-president and general manager; E. J. Peterson, vice president in charge of sales; T. L. Colgan, treasurer; R. G. Bates, assistant sales manager.

New Quarters on Michigan Boulevard



Showrooms of Utility Appliance Corporation Which Sells Electrolux

TOLEDO EDISON TAKES G. E. REPRESENTATION

Toledo, Ohio—E. F. Schmidt, new business manager of the Toledo Edison Co., has announced that the Toledo Edison Co. has been named exclusive dealer in Toledo and vicinity for the General Electric refrigerator. Under the new arrangement the H. G. Bogart Co., 215 St. Clair Street, which has handled the retailing of the G. E. refrigerator, will act as distributor only for the product. A number of salesmen who have been in the employ of the Bogart Company will become associated with the Toledo Edison Co. in the same capacity.

The new dealership will not affect the Toledo Edison sale of Frigidaire in any way. The Edison Company will continue to service and sell Frigidaire at all of its local stores. The addition of General Electric refrigerators to the Edison Company's line has been brought about to give Edison customers wider selection of styles, sizes and models, Mr. Schmidt said.

The new business department of the Edison Company, in preparing for its sales campaign during the summer months, gave a banquet to its sales representatives, May 12, in the Commodore Perry Hotel. Prominent utility men and manufacturers were guests of C. L. Proctor, vice-president of the Toledo Edison Co., including J. A. Harlan, Dayton, sales manager of Frigidaire, and P. B. Zimmerman, Cleveland, sales manager of the refrigeration division of the General Electric Co.

THEY SELL COPELAND AND ADVERTISE JOINTLY

Milwaukee, Wis.—The south side hardware firm of G. A. Butter Co., 674 Eighth Ave., in business for over fifty years, is selling the Copeland line of refrigerators. On the north side of the city, in business for about forty years, is the J. Kornely Hardware Co., also selling Copelands and, incidentally, setting a record this year.

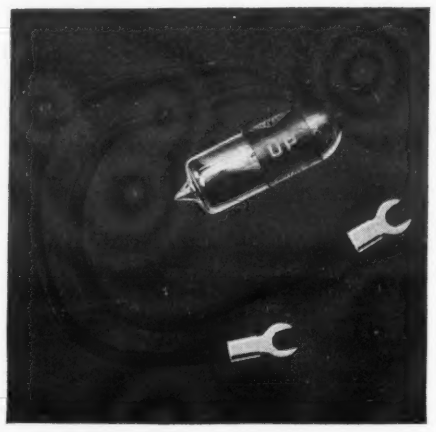
The two firms, the owners of which have been friends for a long time, recently agreed to pool their advertising funds and buy space in the daily newspapers under the joint heading of Butter-Kornely. Both merchants sell the same goods. In this way they can purchase an ad of about twice the size that one firm could afford.

PACIFIC POWER PUSHING REFRIGERATOR SALES

Portland, Ore.—The Pacific Power & Light Co. is off again on another spring General Electric campaign, the opening gun being fired in the early part of March. Special advertising in the daily and weekly papers, billboard showings, highway bulletins and letter inserts are all carrying the message that the utility has a big drive on.

During the sale the company, in addition to domestic sales, expects to place about 100 commercial refrigerators. The campaign will close on August 9 after a duration of about five months.

TIME-O-STAT'S
Con-Tac-Tor
MERCURY SWITCHES
make automatic controls
UNIFORMLY RELIABLE



The Con-Tac-Tor Mercury Switch is an exclusive Time-O-Stat product.

The 149 Airswitch — a reliable air temperature control for commercial refrigeration.

The Series 70 Pressureswitch —a dependable high pressure cutout for commercial refrigeration.

The 75 Bulbswitch—for semi-remote control of freezer cases, brine tanks and soda fountain refrigeration.

THE *switch* is the heart of every electrically-operated automatic control.

Time-O-Stat controls have Con-Tac-Tor *Mercury Switches* —the most durable and dependable switches known! Their high capacities and simple, sturdy construction assure *reliable* automatic control. Where Mercury Switches are used there are no open contacts to burn or wear out — to corrode or catch dirt — no complicated mechanisms needing frequent adjustment . . . The three instruments at the left are operated by Con-Tac-Tor Mercury Switches. They provide accurate, reliable control for commercial refrigerators . . . Send the attached coupon for full details of Time-O-Stat refrigerator controls — with Con-Tac-Tor Mercury Switches.

TIME-O-STAT AUTOMATIC CONTROLS

TIME-O-STAT CONTROLS COMPANY
ELKHART, INDIANA

Branch Offices and Exclusive Distributors in All Principal Cities of the United States.

Canadian Distributors: Toronto and Montreal.
Export Department: New York.
4270 Second Boulevard, Detroit, Mich. — Columbia 2570.
205 East 42nd Street, New York City — Vanderbilt 0134-0135.
400 West Madison Street, Chicago, Ill. — State 3725.
1430 Statler Building, Boston, Mass. — Liberty 2579.
202 Plaza Theatre Building, Kansas City, Mo. — Logan 4660.

Manufacturers of AUTOMATIC CONTROLS *for Oil Burners — Gas Burners — Coal Burners — Electric Refrigerators — Furnace Fans — Mechanical Stokers — Industrial Ovens — Ice Machines — Unit Heaters . . . . . also of Sign Flashers — Mercury Switches — Electric Heaters — Corrugated Metal Bellows.*

TIME-O-STAT CONTROLS COMPANY Dept. 4
Elkhart, Indiana

Without obligation on my part, send me catalog on Time-O-Stat refrigeration controls — with Mercury Switches.

Name.....

Address.....

Company.....

THEY KEEP A-RUNNING

½ Horse Power Century Type SC Squirrel Cage Induction 3 and 2 Phase Motor

RESISTS MOISTURE

Moisture does not affect the continuous operation of Century Type SC Squirrel Cage Induction 3 and 2 Phase Motors. "They Keep a-Running" because the windings are thoroughly insulated and then saturated with insulating varnish. This preserves the insulation and effectively protects the windings against dampness.

These motors are liberally proportioned and well-balanced in design —no one characteristic is overdeveloped at the expense of another .... The bearings last. They are made of phosphor bronze, the best bearing material obtainable—the Century Wool-yarn System of Lubrication is used. Ball bearings can also be supplied.

Built in standard sizes from ¼ to 250 horse power.

CENTURY ELECTRIC COMPANY
1806 PINE ST. ST. LOUIS, MO.

40 U. S. and Canadian Stock Points and More Than 75 Outside Thereof

Century MOTORS

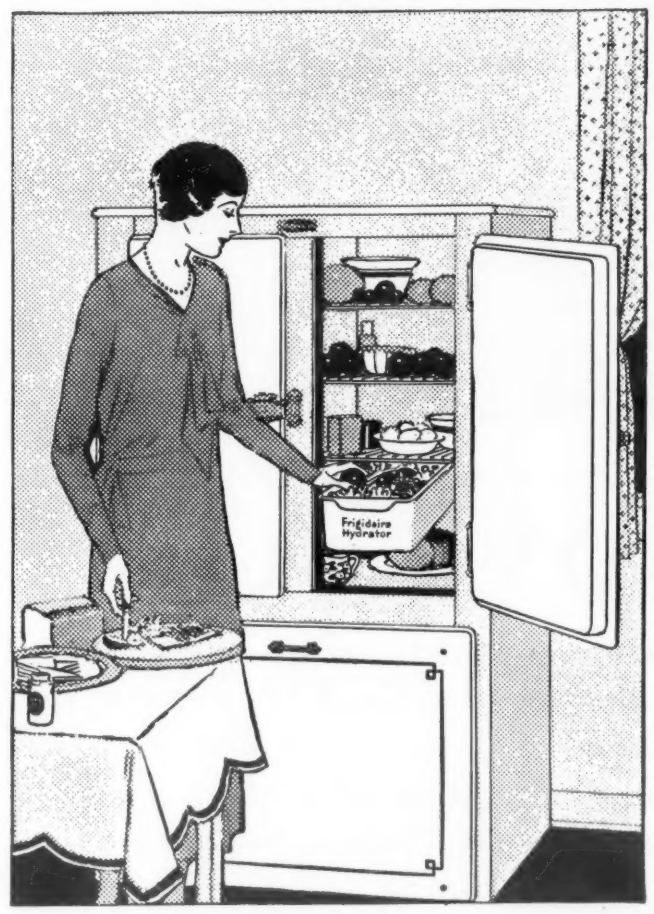
FOR MORE THAN 26 YEARS AT ST. LOUIS

1,500,000 FRIGIDAIRE USERS

are helping dealers sell more Frigidaires

PICTURE the users of one and a half million Frigidaires—many of them living in communities served by you . . . and all recommending Frigidaire. What a powerful influence in increasing your sales!

And when you sell Frigidaire, you know that your customers are going to be satisfied . . . not only in the beginning but through the years to come. For Frigidaire is the long-lived electric refrigerator.



And every Frigidaire is equipped with a mechanical unit that is incredibly quiet and extra-powerful . . . so powerful that it maintains constant low temperatures, no matter how hot the weather or how warm the kitchen.

All Frigidaire household cabinets are semi-flexible Porcelain-on-steel inside and out . . . the most practical refrigerator finish yet discovered. It will not rust, scratch, peel or blister.

And to add still further to the satisfaction of users, every household Frigidaire has the Hydrator for freshening vegetables. All have the famous "Cold Control" . . . a patented device that brings temperatures in the freezing compartment down to zero.

With all these advantages . . . and with three times as many Frigidaires in use as any other make of electric refrigerator . . . Frigidaire offers dealers everywhere a greater sales opportunity than ever before.

FRIGIDAIRE CORPORATION

Subsidiary of General Motors Corporation, Dept. M-22, Dayton, Ohio

"Good work—wouldn't be without your very newsy paper."—A. N. Delzirth, 16517 Clifton Blvd., Lakewood, Ohio.

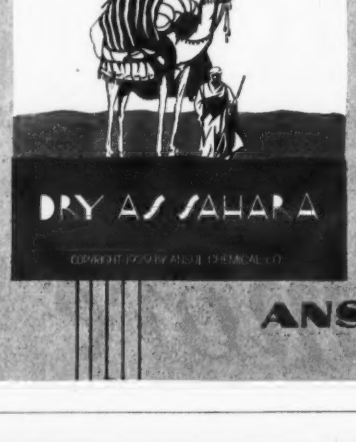
"Like Frigidaire news best but on the whole I like your paper."—Malcolm Meyer, Box 649, Amityville, N. Y.

"Your variety has been good."—T. J. Fowler, 650 N. Lorel Ave., Chicago, Ill.

DRY DRIER DRIEST

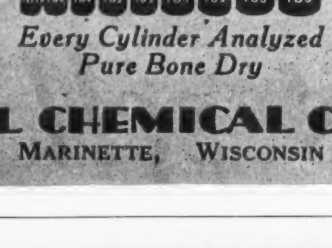
SULPHUR DIOXIDE

for Direct Charging



"Ansul" Sulphur Dioxide is scientifically dried through a four stage dehydrating system, each stage being composed of three units in series. Absolute manufacturing control is maintained throughout.

Also ton drums and tank cars



Every Cylinder Analyzed Pure Bone Dry

ANSUL CHEMICAL CO.
MARINETTE, WISCONSIN

Norge-Missouri Develops Big Organization

FIVE years ago Ernie E. McMullen and John C. Schott comprised the entire organization of the Norge Company of Missouri. Today over one hundred persons are employed in serving the states of Missouri, Kansas, Oklahoma, Arkansas and Southern Illinois.

The company occupies a two-story, modern building of its own at 4000-06 La Clede Ave., St. Louis, Mo., containing thirty-five thousand square feet of floor area. Sales run into six figures and are more than doubling each year. Only two men are required to service the 6,000 freezers in St. Louis.

GEORGE MOISTER LEAVES PHILADELPHIA BRANCH

Philadelphia, Pa.—George W. Moister, an old-timer in electric refrigeration sales circles, was honored at a social gathering of employes of Kelvinator-Philadelphia, Inc., May 16. The occasion was his leaving the Kelvinator factory branch, of which he was vice-president and general manager, and the completion of seven years' selling Kelvinators, six years with the factory organization. Mr. Moister was presented with a wrist watch suitably engraved, expressing the good wishes of the branch employes.

Moister was originally hired May 13, 1923, as a salesman by R. E. Densmore, now director of sales of Norge, who was then general manager of the Kelvinator distributorship, Kelvinator-Chicago, Inc. Moister was soon made sales manager, and a year later became associated with the Kelvinator factory as state supervisor. Positions as district sales manager, sales promotion manager in Detroit, special representative in the Eastern states and then on the Pacific Coast followed. Prior to his connection with Kelvinator he was active in newspaper and advertising work in Indiana.

SERVEL GETS LARGE JOB FROM WAR DEPARTMENT

Evansville, Ind.—Servel Sales, Inc., has just received notice that the annual contract by the War Department in the furnishing of refrigerators for various army encampments officers' quarters, etc., has been awarded to Servel.

This covers approximately $50,000 worth of equipment for encampments in various parts of this country and outlying territories. This is the second award which Servel has received, the 1929 contract going to Servel also.

SWEENEY CO. INCREASES DENVER STAFF

Denver, Colo.—A number of new men have been added to the sales organization of the B. K. Sweeney Electrical Co., distributors of General Electric refrigerators, J. E. Flynn, sales manager, announced recently.

Eli Stake was promoted to the position of supervisor of the sales organization of Denver, while J. H. Stange, will be assistant manager for the retail division in the city, and L. R. Spates, formerly of the Utah Power and Light Co., Salt Lake City, will handle sales in the commercial division for Denver. J. H. Stone, formerly of the Arizona Power Co., Phoenix, will have charge of sales in the apartment house division, and W. N. Rasmussen, formerly of Glueck & Co., Kansas City, is in the domestic department here.

For the first four months of the year a gain of nearly 34 per cent in sales has been shown over the same period of last year, Mr. Flynn reported. The B. K. Sweeney Electrical Co. represents the General Electric Company in Colorado and parts of Wyoming, New Mexico and Nebraska.

H. E. ASHMORE TO LEAVE ATLANTIC UTILITIES

Bridgeport, Conn.—H. E. Ashmore has resigned as general sales manager of the Atlantic Utilities Company, 59 Cannon Street, Electrolux and Servel distributors for Connecticut, Rhode Island and part of Massachusetts. His resignation became effective May 30. Mr. Ashmore's future plans or the name of his successor have not been announced.

Atlantic Utilities is now supplying 102 dealers in its territory. Eighty per cent of these handle Electrolux exclusively. Two dealers have recently been appointed in Stamford, the Stamford Gas & Electric Company, 431 Atlantic Street, and Morrison Electric Company, Main Street. The Atlantic company recently moved its offices across the hall in the Center Building.

BAKER OFFICIAL IS NOW CONTACTING EXPORT MEN

Omaha, Nebr.—J. N. Clemmer, export manager, Baker Ice Machine Company, left here, May 25, on an extended sales trip to Mexico. Mr. Clemmer will call on firms located in Monterey on his trip south, after which he will proceed to Mexico City where he will confer with the General Supply Company, general agents for Baker ice making and refrigerating equipment in Mexico. While there he will also meet Senor Menalio Marin, Baker representative in Merida, Yucatan, who has just completed a co-operative arrangement for the construction of a large ice plant in his territory, and who will fly some 800 miles to Mexico City to discuss with Mr. Clemmer general conditions and prospects.

On his return trip Mr. Clemmer plans to stop at Zacatecas, Torreon, and Chihuahua to contact Baker sub-agencies in those cities, entering the United States again at El Paso, Texas.

Commenting on Mr. Clemmer's third foreign trip and its effect on future export business to Mexico and other Spanish-speaking countries south of the Rio Grande, J. L. Baker, president, said: "Judged by our past and present export sales volume, this territory has proven a particularly favorable market, the possibilities of which have only begun to be developed. As a whole, our export business is not only growing in volume but has expanded to the point where our plants know no climatic or geographical bounds. At present over forty foreign countries are using Baker ice making and refrigerating machines."

DAUGHERTY CO. CELEBRATES SIXTH BIRTHDAY

Chattanooga, Tenn.—H. M. Daugherty, president of the Daugherty Supply Co., distributors for Kelvinator, was host recently in the celebration of the sixth anniversary of his company. The occasion was marked by the opening of a new and larger establishment at 712-14 Cherry Street.

Mr. Daugherty reports that the change of location was necessitated by his expanding business. Sales have shown an increase of 62 per cent over a period of three months. More than a thousand Kelvinators have been sold by the Daugherty Supply Co. and installed in Chattanooga. The company operates another store at Knoxville, and with forty dealers in key towns serves a part of six states within the territorial area. It has grown in six years from a concern employing two men to its present staff of 20 people at the main office in Chattanooga.

FRIZZELL TAKES AGENCY FOR KELVINATOR

Cleveland, Ohio—The Kelvinator Sales Corp. here has signed two new dealers, the Stevens Electric Store in Conneaut and Gongwer-Frizzell Co., Painesville, Ohio. The entry of Ralph Frizzell into the household cabinet field marks the return of one of the pioneers in the industry. Mr. Frizzell was very active in the development of Nizer ice cream cabinet equipment in 1921 and 1922.

METROPOLITAN UTILITIES PUSHING ELECTROLUX

Omaha, Nebr.—The Metropolitan Utilities Company, handling Electrolux in the Omaha territory, made the first big push for sales early in May, when a flyer, 15 x 16 inches in two colors, was sent to all the users of gas in the city. There are 46,000 gas meters in the city. The folder showed nine models and made a strong bid in favor of Electrolux. It resulted in an immediate increase in sales.

Above All

The unusual completeness with which the Norge line for 1930 meets the hitherto unsatisfied requirements of distributors, dealers and public alike, has in a few weeks placed the Norge Franchise high above all others,—gained it immediate recognition as the most valuable franchise in the refrigeration industry.

Your appreciation of the outstanding superiorities of the Norge line will increase in direct proportion to the extent of your past experience in refrigeration.

Let us give you the facts.

NORGE
CORPORATION DETROIT
DIVISION OF BORG-WARNER

20 YEARS IN THE MANUFACTURE OF PRECISION MACHINERY —YEARS OF SATISFACTION IN THOUSANDS OF INSTALLATIONS THROUGHOUT THE WORLD—THE FINANCIAL AND ENGINEERING STRENGTH OF THE GREAT BORG-WARNER ORGANIZATION—ALL ASSURE NORGE SUPREMACY IN DESIGN, CONSTRUCTION AND VALUE

UNITED ACTION NEEDED TO SELL REFRIGERATORS

By H. E. Young, General Sales Manager, Northern States Power Co.

THE policy of the Northern States Power Co., Minneapolis, in developing refrigeration business is to conduct a reasonably active selling effort of our own, while at the same time encouraging and co-operating with all other leaders and agencies selling electric refrigeration.

As a result throughout our entire territory the three principal refrigerators are actively represented, while in the larger cities one or more additional makes are represented actively. Unquestionably electric refrigeration is a very important item in developing residential business.

All these agencies appear to be doing a very satisfactory business and all claim their sales this year are greatly ahead of last and we in turn find our sales show a very satisfactory increase over last year. Our quotas were set very optimistically and there appears to be no trouble meeting them.

Our methods consist in a more or less constant selling effort supplemented by periodical campaigns, for which various stunts are developed for stimulating interest on the part of both salesmen and public. Our efforts are also supplemented by numerous home service demonstrations, both by our own force and by factory representatives. We have had as many as 400 women attend one of these demonstrations.

There are, of course, a great many opinions as to methods which the central station company should employ in performing its part in the development of electric refrigeration, and arguments and discussions on the subject are numerous and lengthy. We have no end of them among ourselves, and in meeting representatives of other companies these discussions and differences of opinion are correspondingly in evidence.

Generally speaking, I am of the opinion, as I have frequently expressed myself, that in all central station programs the manufacturers of electric refrigeration, especially the leading ones, should be given every consideration.

My reason for feeling this way is due to the important part which manufacturers have played in bringing electric refrigeration up to its present point of public acceptance. It can truthfully be said that there has never been any piece of equipment for the home representing anything like the value to central stations in current consumption that the electric refrigerator represents which has been promoted and popularized so largely by the manufacturers.

Heretofore such items—the electric range for example—and even items of lesser importance in current consumption, have been pioneered very largely at the expense of the central station company.

On the other hand, while the central station companies have played a considerable part in the development of electric refrigeration, the part played by the manufacturers in advertising, selling expense, etc., has been of such an unusual nature, both in magnitude and results, that these manufacturers are entitled to every consideration.

This consideration should be given to these manufacturers regardless of which make of refrigerator a particular central station may be selling. It must be appreciated that the manufacturers of other makes, especially the leading makes, have played just as important a part in developing the market for electric refrigeration as has the central station or the manufacturer of the make which the central station happens to be representing.

It must be appreciated that the central station's ability to sell whatever make they may happen to represent is due largely to the advertising and selling effort put forth by the manufacturers of other makes.

The leading manufacturers of electric refrigeration set a bold and daring course in the promotion of this piece of household equipment, in that they started out to sell it nationally, a program which requires nowadays almost unlimited resources, and which requires millions of dollars in publicity and sales expense. This national program has been supplemented in all instances by local programs, whether participated in by central stations or not.

METHYL CHLORIDE NOT DANGEROUS IN FOODS

THE United States Bureau of Mines has issued a report on "Observations on the Possibility of Methyl Chloride Poisoning by Ingestion with Food and Water." This data is contained in Public Health Reports, Vol. 45, No. 19. It is by W. P. Yant, supervising chemist, H. W. Shoaf, assistant toxicologist, J. Chornyak, medical officer in charge of pathological laboratory, health laboratory section.

Results of this extensive study are summarized here: The possibility of poisoning by ingestion of methyl chloride contaminated food and water was studied by exposing dogs.

1. No apparent signs of poisoning were caused by the average daily ingestion on four consecutive days of 550 grams of ground raw beef or 200 c. c. of milk that had been exposed 15 to 75 hours to 100 per cent methyl chloride vapor at 35°F.

2. No apparent symptoms of poisoning or changes in the hemoglobin and blood cells were caused by the ingestion of methyl chloride contaminated water on 115 days of a total period of 171 test days. Also, no formates were found in the urine. Autopsy and examination of frozen sections, however, revealed a moderate degree of intracellular fatty degeneration affecting the ascending, descending, and collecting tubules of the kidney. Analysis showed the water to be 75 to 100 per cent saturated with an average methyl chloride content of 0.595 gram per 100 c. c. of water. This was the only water given the animals on six days of each week of the test.

3. The taste of water saturated with methyl chloride at 68°F. is sharp, sweetish, and sickening when first taken into the mouth, followed almost immediately by a burning sensation. Persons would not drink more than a mouthful or two. It was frequently refused by the animals, even though they were deprived of other water.

CAMP CO-OPERATION WILL BE HELD AUG. 8-12

New York, N. Y.—Camp Co-operation has been called for August 8 to 12 and will be held at Association Island, Henderson Harbor, New York, under the auspices of the League Council and sponsored by the Society for Electrical Development.

Foreshadowing the event, a preliminary meeting of the camp's business program committee was held at S. E. D. headquarters in New York on May 7 under the chairmanship of David Birdsell, who as vice-chairman of the League Council has succeeded R. Bourke Corcoran, resigned.

MILWAUKEE CONSIDERS EMERGENCY ORDINANCE

Milwaukee, Wis.—The public utilities and health committee of the Milwaukee common council, meeting May 27 in the city hall, recommended the passage of an emergency ordinance regulating the installation and operation of electric refrigerating units.

The proposal was drafted by Dr. John P. Koehler, health commissioner for the city of Milwaukee; Leon M. Gurda, city building inspector; R. W. Cunliffe, director of laboratories for the city, and representatives of electric refrigerator companies. They said that the ordinance was a fair one.

The proposal stated that all refrigerator units, individual or multiple, should use an odorous gas and that the substitution in units now using odorless gas should be made within thirty days of date. It was given out that odorous gas would be a safety factor in warning persons of escaping gas before dangerous results ensued.

The draft called for approval of all individual units before installation, hereafter, by the health commissioner of the city and the building inspector, and for annual inspection of all installed units.

The ordinance also provides the following: Before individual units may be installed in homes they must receive the approval of the building inspector's department.

All individual systems using more than 20 pounds of refrigerant must procure an individual permit at a cost of 50 cents a unit. Multiple systems installed in apartments and hotels must obtain a similar permit at a minimum fee of $3.00 and a maximum of $35.00.

Every unit and system must be inspected when installed. Annual inspections are to follow.

Dr. W. D. McNally, associate toxicologist for the Chicago Department of Health, speaking at the meeting of the common council which recommended for passage an emergency ordinance requiring odorous gas in electric refrigerators, stated that the ordinance could be made more effective if theatres, auditoriums and other paces of public assembly be included in the regulations.

N. E. L. A. Convention Program

All Convention Sessions and Evening Entertainment will be held in the Exposition Auditorium

Saturday, June 14th:
Registration will open at 2:00 P. M.
Local members will greatly aid convention operations by registering Saturday or Sunday afternoons.

Sunday, June 15th:
Registration will open at 2:30 P. M.

Monday, June 16th:
Registration will open at 9:00 A. M.
Pacific Coast Electrical Association Convention in morning—time to be announced.
Rural Electric Service Committee meeting, 10:30 A. M., Room 262, St. Francis Hotel.
National Women's Committee Meeting, 10:30 A. M., California Room, Palace Hotel.
Public Relations National Section, Executive Committee Meeting, 10:30 A. M., Sharon Room, Palace Hotel.
Accounting National Section, Executive Committee Meeting, 10:30 A. M., Tapestry Room, Palace Hotel.
Engineering National Section, Executive Committee Meeting, 11:00 A. M., English Room, Palace Hotel.
San Francisco Electrical Development League Luncheon, 12:15 P. M., Gold Ballroom, Palace Hotel.
National Executive Committee Meeting, 1:30 P. M., Sharon Room, Palace Hotel.
National Employes' Speaking Contest Elimination in afternoon, 2:15 P. M., Gold Ballroom, Palace Hotel.
Commercial National Section, Executive Committee Meeting, 3:00 P. M., English Room, Palace Hotel.
The President's Reception at 9:00 P. M., to be followed by dancing.

Tuesday, June 17th:
First General Session at 10:00 A. M.
Accounting National Section Session at 3:00 P. M.
Engineering National Section Session at 3:00 P. M.
Entertainment for Ladies to be announced.
Dancing in the evening.

Wednesday, June 18th:
Second General Session at 10:00 A. M.
Class "D" Members—Manufacturers' Meeting, 12:45 P. M., Exposition Auditorium.
State Public Utility Information Directors' Luncheon-Meeting, 1:00 P. M., Sharon Room, Palace Hotel.
Commercial National Section Session at 2:30 P. M.
Entertainment for Ladies to be announced.
Entertainment and Dancing in the evening.

Thursday, June 19th:
Third General Session at 10:00 A. M.
Public Policy Committee Luncheon-Meeting, 1:00 P. M., California Room, Palace Hotel.
Public Relations National Section Session at 3:00 P. M
Finals and Awards—National Employe Speaking Contest.
Public Policy Committee Session at 8:15 P. M. Public invited.

Friday, June 20th:
Fourth General Session at 10:00 A. M.
Convention adjournment about 1:00 P. M.

As it is not customary to hold Manufacturers' Exhibits in connection with Pacific Coast Conventions, there will be no Manufacturers' Exhibit in San Francisco. However, there will be a number of Section, Bureau, Committee and N. E. L. A. Headquarters Exhibits in the Polk and Larkin Street Halls of the Exposition Auditorium. Delegates and guests are cordially invited to inspect these interesting exhibits.

"Bridgeport" TRADE MARK

LEDRITE ROD HIGH SPEED FREE CUTTING BRASS

Have you speeded up your automatic screw machines to take advantage of the high speed free cutting qualities of Ledrite brass rod?

Ledrite has been responsible for the speeding up of automatic screw machines with resulting economy in fabrication of screw machine products.

Ledrite does not wear out tools excessively, which means longer uninterrupted runs and a more accurate finished product. Large stocks of standard sizes always on hand. Get a trial lot of a ton or two and run it in comparison with the rod you are now using.

Brass Mill Products and Fabricated Articles to Order

Bridgeport Brass Company

Bridgeport, Connecticut

New York, Cleveland, Buffalo, Detroit, Newark, Philadelphia, Boston, Providence, Chicago, Louisville, Dayton

Day and Night Water Coolers

THE Day & Night Storage Water Cooler consists of a heavy gauge steel tank, in which is inserted a cooling unit provided with metal fins to increase heat absorption from the water. All parts are heavily coated by means of the hot galvanizing process. All joints are hermetically sealed by electric welding. No bolts or gaskets are used in attaching refrigerating sleeve to water cylinder. Connection with the compressor unit is made by means of the fittings shown on the end of the tank. Any compressor unit may be used.

Cooling tanks are furnished with or without insulation in the following sizes:—3, 5, 10, 20, 30, 40, 50 and 100 gallon storage capacity. Also a complete line of cabinet models for restaurants and drinking fountains.

Day & Night Storage Water Coolers operate on any normal city pressure. Water is stored in an air-tight cylinder of heavily galvanized steel. No coils or complicated working parts.

Storage capacity provides for large peak loads, thus permitting the use of smaller condensing units, and eliminating high head pressures.

Day & Night Storage Water Coolers, because of the storage principle, are particularly adaptable to all types of installation where the water cooling system is operated in multiple with other cooling equipment, such as refrigerators, show cases, soda fountains, etc.

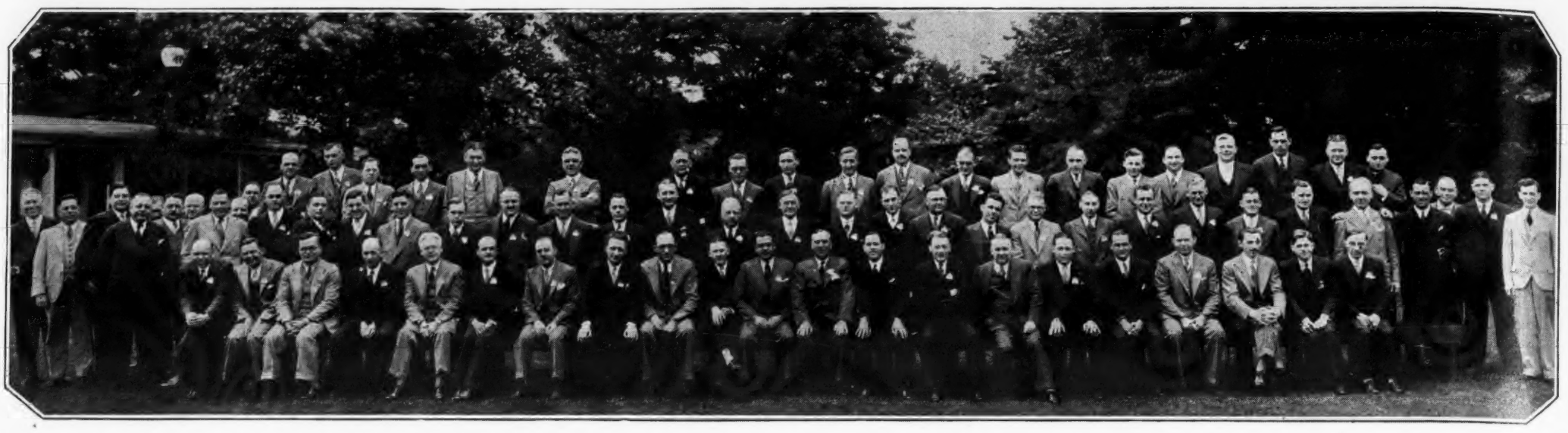
Write for our complete bulletin illustrating a wide and varied line of models which can be operated by any compressor unit.

DAY AND NIGHT WATER HEATER CO., Ltd.

Water Cooler Division

2320 E. 8th ST. LOS ANGELES, CALIFORNIA

General Electric Host to Central Station Men



Cleveland, Ohio—The electric refrigerator is a promoter of good will in the home, T. K. Quinn, manager of the electric refrigeration department of the General Electric Company, said in a message to the Central Station Merchandise Managers' Conference, held at Nela Park, May 19.

"How often do we need to remind ourselves that our personal objectives in business must be impersonal and correspond to those of the industries to which we are giving our lives if we are to do our best work?" he asked. "Can a man be successful in a commercial enterprise if he doesn't clearly understand what the company with which he is associated is trying to do? Even if he knows the full purpose of the business, has he any real chance of being a credit to himself if he doesn't go about furthering these purposes with all the strength and intelligence he can command?

"The foundation of the electrical industry is service to the customer, and in the case of the great public utility companies there are special reasons why the customers should be more than satisfied.

"Coming now to the immediate object of this meeting, did you ever hear of a General Electric refrigerator owner who wasn't delighted with his purchase, or a utility company that was not glad of the opportunity to please the customer and get some reasonable return for the investment already made? The electric refrigerator is easily first and in a class by itself as a promoter of good will in the home and as a load builder.

"Should we not go about our work with enthusiasm for the benefit of the customer who doesn't know until we tell him and for the companies that produce the article and the current to run it, which are silently hoping that we will come to life, and finally, for the benefit of ourselves, the employees who continually do so much less than we are capable of doing?"

P. B. Zimmerman, general sales manager, told the 125 utility men present that records showed 90 per cent of sales were closed by the individual salesman. He stressed the load building factor of the electric refrigerator and showed charts which depicted how the refrigerator tends to even out the domestic load curve.

Emphasizing the importance of advertising in today's competitive market, Walter J. Daily, sales promotion manager, told the utility merchandising managers that this year is one of a battle of advertising in every line.

"In our division we have endeavored to offer the best in the way of national and local advertising copy, illustrations, direct mail, window displays and dealer helps," he continued. "We sincerely believe that the easiest, best and most economical method for dealers and distributors to follow in their sales promotion activities is to make use of the material offered by the manufacturer. He is getting the best art work that can be obtained, the best copy, the best thoughts along each line."

Mr. Daily then reviewed a number of ads, which stressed the salient features of the General Electric refrigerator, and he pointed out that national magazine advertising gave the product an estimated 120,000,000 potential impressions each month. He touched upon campaigns for the apartment house market, rural market, commercial field and others.

Following Mr. Daily's talk, H. T. Hulett discussed new product features. He said that the apartment house model had been increased from 3½ cubic feet to 4 cubic feet, and that the G-55, now known as the S-62, had been increased from 5½ to 6 cubic feet of storage space.

At the afternoon session, Dr. George W. Allison, of Chicago, discussed salesmanship. "The public today knows values," he said, "and the buying public is smart. Each year 250,000 men and women filter out of our universities. Advertising, the radio and opportunity to get about more all have helped to make the buying public intelligent. It is no longer 'let the buyer beware.' Today it is 'let the seller beware.'

"The national average is that four times a day somebody is knocking on the front door of the home. Somebody with something to sell. Mrs. Smith has become trained in getting rid of people at her door. She is not only an expert at this, but she is often fed up with unintelligent sales people who try to sell her something with which she often is more familiar than the sales person.

Selling Job Getting Tougher

"The electric refrigerator is a specialty and you can't get volume on a specialty unless you are a door knocker. But it is necessary to know everything about the product and to know the best and most intelligent way to present the story. Direct selling becomes tougher each year.

"I would advise all public utility companies to do one thing first: obtain an informed and enthusiastic employee organization. Selling is the function of the entire organization — bookkeepers, meter readers and everyone else. Many sales are lost because of the way the telephone operator answers the ring of the phone, by the way the product is delivered or serviced. I know of one woman who was ready to buy an electric range, when the meter reader came along. He said, 'If you buy that, then you will kick about your bills.' And she didn't buy it.

"How many of your people know the meaning of electric service? How many know the value of the electric refrigerator? Get them sales-minded, enthusiastic about the service and the appliances and they will be your best salesmen and saleswomen because they will talk it among their friends. And you take 2,000 or 3,000 employees doing that and you have a wonderful sales aid."

One of the most interesting hours of the session was conducted by A. C. Mayer, merchandising service division manager of the General Electric refrigeration department.

A. L. Scaife, of the merchandising service division, discussed "Making Good Salesmen Better."

out that many central stations which do a merchandising business operate along different lines; some having employee campaigns on appliance sales; others depending on their regular sales organization. However, he declared, a plan was necessary—a definite, concrete plan of action. He asked many of those present to outline their activities and a round table discussion resulted in which views were exchanged.

Among Those Present

A partial list of those attending the meeting follows: Earle R. Wall, Knoxville Power & Light Co., Knoxville, Tenn.; C. G. Neff, Southern Ohio Electric Co., Columbus, O.; J. F. Broerman, Toledo, Bowling Green & So. Traction Co., Findlay, O.; C. V. Sorenson, Utilities Service, Inc., Indianapolis, Ind.; R. J. Chapman, Western Reserve Power & Light Co., Cleveland, O.; Wm. Wolfenden, Appalachian Electric Power Co., Roanoke, Pa.; A. T. Wilks, Appalachian Electric Power Co., Huntington, W. Va.; W. R. Power, Appalachian Electric Power Co., Huntington, W. Va.; O. A. Acuff, Illinois Power & Light Co., Decatur, Ill.; M. L. Parsons, Illinois Power & Light Co., Galesburg, Ill.; M. R. Rodger, Central Illinois Public Service Co., Springfield, Ill.; J. H. Grant, Ohio Electric Power Co., Sidney, O.; N. F. Lawler, Eastern Shore Pub. Serv. Co., Salisbury, Md.; E. M. Cobb, Ohio Power Co., Canton, O.; A. L. MacMillan, Philadelphia Electric Co., Philadelphia, Pa.; J. Everett Brown, Philadelphia Electric Co., Philadelphia, Pa.; Lloyd Leslie, Delaware Power & Light Co., Wilmington, Del.; L. W. Haley, Lexington Utilities Co., Lexington, Ky.; F. E. Reiber, Atlantic City Electric Co., Atlantic City, N. J.; B. F. Lee, Atlantic City Electric Co., Bridgetown, N. J.; H. H. Davis, Northern Ohio Power & Light Co., Akron, O.; H. J. VonNeida, Edison Electric Co., Lancaster, Pa.; R. M. Phelps, Penn Central Power & Light Co., Altoona, Pa.; Ray Conger, New York Power & Light Co., Albany, N. Y.; W. Notter, Penna. Power & Light Co., Allentown, Pa.; W. H. Aitken, Canadian General Electric Co., Toronto, Can.; S. A. Elliott, Canadian General Electric Co., Toronto, Can.; W. S. Bushell, Toronto Hydro Electric System, Toronto, Can.; F. S. Rhoads, Windsor Hydro Electric System, Toronto, Can.; W. D. Brown, Canadian Niagara Power Co., Toronto, Can.; E. W. Wade, Canadian General Electric Co., London, Ont.; F. Wilkinson, London Hydro Light & Power Co., London, Ont.; Geo. E. Fuller, Worcester Electric Light Co., Worcester, Mass.; P. F. Dewhurst, Ohio Public Service Co., Elyria, O.; C. L. Dunn, Ohio Public Service Co., Cleveland, O.; N. C. Foster, Ohio Public Service Co., Cleveland, O.; E. R. Treverton, Ohio Public Service Co., Cleveland, O.; J. U. Walker, Ohio Electric Power Co., Oberlin, O.; Wm. Keay, Associated Gas & Electric Co., Cambridge, Mass.; P. J. Wilson, Narragansett Electric Co., Providence, R. I.; Smithers Merrill, Toledo Edison Co., Toledo, O.; H. G. Bogart, Jr., H. G. Bogart Co., Akron, O.; T. L. Mauldin, Bulpitt Refrigeration Co., Springfield, Ill.; T. J. Sullivan, Eastern Hdwe. & Supply Co., Atlantic City, N. J.; Judson C. Burns, Judson C. Burns, Inc., Philadelphia, Pa.; Paul Burns, Judson C. Burns, Inc., Philadelphia, Pa.; N. K. Ovalle, N. K. Ovalle, Inc., Harrisburg, Pa.; L. H. Miller, Electric Refg. Co., Louisville, Ky.; B. M. Walthall, General Electric Co., Louisville, Ky.; P. C. Wagner, General Electric Co., Cleveland, O.; H. J. Jenkins, Electric Refg. Co. of N. E., Boston, Mass.; A. F. Head, Hoosier Electric Refg. Co., Indianapolis, Ind.; J. L. Bouten, H. G. Bogart Co., Toledo, O.; Dan Willis, The Willis Co., Akron, O.; Geo. S. Patterson, Florida Elec. Refg. Co., St. Petersburg, Fla.; R. E. McMillan, Page-Morris, Inc., Albany, N. Y.; Harold G. Rahn, Buffalo General Electric Co., Buffalo, N. Y.; Wm. Hensel, Buffalo General Electric Co., Buffalo, N. Y.; Taylor C. Harvey, Public Service Co. of N. H., Manchester, N. H.; R. C. Eaton, C. H. Tenney Co., Boston, Mass.; R. A. McKibben, Manila Electric Co., Manila, P. I.; W. Archibald, Wheeling Electric Co., Wheeling, W. Va.; E. J. Kirkpatrick, Indiana General Service Co., Muncie, Ind.; Dr. George Allison, Chicago.

Cleveland representatives of the electric refrigeration department of the General Electric at the meeting were: P. B. Zimmerman, M. H. Mahoney, Walter J. Daily, H. H. Bosworth, Harry Mealey, Al Uhalt, W. A. Toker, Fred J. Bollmeyer, Lord & Thomas and Logan, Paul H. Dow, Donald Denman, J. DeJen, J. M. Walther, F. J. McBride, C. G. Smith, Earl Norling, H. Bruhn, O. C. Hamilton, C. Q. Hamlin, J. J. Donovan, C. J. Enderle, H. W. Kumler, H. T. Hulett.

ANNOUNCING

Artic A*

*A REFRIGERATION GRADE OF METHYL CHLORIDE CONTAINING 1% ACROLEIN AS A WARNING GAS, UNDER THE TRADE NAME ARTIC A, WHICH WE ARE NOW PREPARED TO SUPPLY

ARTIC A has the approval of the U.S. Bureau of Mines. The incorporation of Acrolein as a warning agent in ARTIC will fit it to meet present municipal regulations, as well as those now under contemplation.

The advantages of ARTIC will be unimpaired for refrigeration use in household units—florists and apartment refrigeration—fur storage—ice cream cabinets—drinking water coolers—frosted foods—dairies—butcher shops—etc.

ARTIC A makes a significant contribution to modern refrigeration in retaining the impressive advantages of

- High stability in the range of refrigerating temperatures.
  Non-corrosive action on the common metals.
- Exceptional operating efficiency.

This grade will be supplied, when specified, at no advance in cost. A bulletin, prepared by our technical department, giving complete specifications and data on Acrolein, will be sent upon request. Technical inquiries will receive competent consideration, with a view to placing you in position to use ARTIC or ARTIC A with economy and satisfaction.

The ROESSLER & HASSLACHER CHEMICAL CO.
10 East 40th Street, New York, N. Y.

R&H CHEMICALS

Increased Food Capacity-

YOU can add approximately ONE CUBIC FOOT to the food storage capacity of your 5 foot model without increasing outside dimensions. ● It is possible to do this with Dry-Zero Pliable Slab Insulation and yet maintain the desired low temperatures for safe food preservation. ● Because of Dry-Zero's marked superiority, it is unnecessary to have thick walls of heavy insulation for normal and permanent operating efficiency. For comparative facts, see table below. ● Insulation should be used only for its resistance to heat. This is a fact of major importance, as all leading engineers will attest. ● Dry-Zero insulated cabinets are as sturdy in construction as the automobile body of today. ● Increase your sales with increased food capacity.

Thermal efficiency tests have been made by impartial national authorities, such as the U. S. Bureau of Standards, etc. Results of such tests yield the following comparisons:

Dry-Zero Pliable Slab . . .	100
Cork Boards (Commercial) . .	80
Cane Fibre Board . . .	80
Wood Fibre Boards . . .	75
Mineral Wool Slab . . .	71

By decreasing wall thickness only one-half inch the food storage capacity of Dry-Zero insulated cabinets would be increased:

4 cubic foot box . .	0.7 cubic feet
5 cubic foot box . .	0.9 cubic feet
6 cubic foot box . .	1.0 cubic feet
7 cubic foot box . .	1.2 cubic feet
9 cubic foot box . .	1.3 cubic feet
12 cubic foot box . .	1.6 cubic feet

DRY-ZERO CORPORATION, 130 N. WELLS ST., CHICAGO, ILL.

DRY·ZERO

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

Published Every Two Weeks by

BUSINESS NEWS PUBLISHING CO.

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All Other Countries: $2.25 per year; two years for $4.00

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Quick-Frozen Foods

THOSE who make the long trip to San Francisco for the N. E. L. A. Convention will do well to keep their eyes open for manifestations of the growing popularity of quick-frozen foods. Many will probably eat quick-frozen products somewhere along the route without even being aware of the fact, as some of the hotels serving them are making no special point of the fact, letting the quick-frozen products compete on equal terms with fresh meats, fruits and vegetables.

In the Refrigerated Food Section of ELECTRIC REFRIGERATION NEWS is printed the latest material in regard to this new method of preparing and distributing food products. Every sale of quick-frozen products means more refrigeration, and more refrigeration under modern methods means more electric power needed by the public.

Abandoning Merchandising

AT this time a year ago the columns of the NEWS contained a wealth of material discussing the merchandising activities of public utilities. Both schools of opinion were represented, the dealer who felt that the utility in his home city was entirely too competitive in spirit and action, and the utility men who believed that the sale of increased numbers of appliances was so important to the general development of the industry that the utility was not only entitled, but bound, to take an active part in merchandising appliances of every sort.

In view of that discussion, the recently announced policy of the Central Hudson Gas and Electric Corporation of Poughkeepsie, New York, is of interest The Central Hudson organization, which operates in a large number of cities and towns in the Hudson River Valley, has announced its intention of going out of the merchandising business, and has already begun the process of withdrawal.

The sale of refrigerators has come in for early attention. The company has voluntarily surrendered its refrigeration franchises, and is co-operating closely with refrigeration dealers in its territory. In some cases this co-operation has taken the form of encouraging its own refrigerator salesmen to go into business on their own account, and the company has promised them support of various kinds. In Kingston, N. Y., four Central Hudson salesmen have formed their own company, opened a showroom and offices, and are selling refrigerators at an even faster pace than last year when they were working for the power company. In other cities the company is actively working with dealers who have previously demonstrated their ability.

The new Central Hudson policy is still in a transition stage. Numerous details will have to be worked out as time goes on. Some of the details of the plan are described elsewhere in this issue of the NEWS. In many respects the plan is not new, as other companies, principally in the West, have made experiments of a like nature. But the Central Hudson policy goes further than some of the others, and the success attained will be watched with keen interest.

Refrigerator As Load Builder

A REPRESENTATIVE of one of the best known public utilities in the country was speaking recently to a gathering of refrigerating engineers. He naturally was talking about electric refrigerators. "Our Company has a substantial investment in every refrigerator sold in the territory we serve," he declared, "and for that reason alone we want every refrigerator sold to be a good machine, and we want it kept in good working order every minute."

That man knew what he was talking about. He knew that the electric refrigerator is increasing in importance as a load builder by leaps and bounds, if it is permissible to use such an expression in regard to a machine which stands where it is put, and quietly attends to its business of keeping health in the household.

Sales of refrigerators this year may easily reach or exceed the million mark. Their load building curve is headed for the top of the list. The public has accepted the electric refrigerator, and the public utilities in the space of a few short years have gained their share of the benefit of that acceptance. And the end is not yet.

Chief Greets Star

E. G. Biechler, President of Frigidaire, welcomes Frank Gould, leading salesman, at Dayton Station

REAL WORKER IS AIDED BY KEEN COMPETITION

By Charles P. Rodman

Omaha, Nebr.—That public utilities companies engaged in selling electrical appliances are an actual asset to the local dealers is the conviction of E. J. Nellor, vice-president and general manager of the Storz Electric Refrigeration Company, of this city. "In fact, it would actually help other local dealers selling electrical refrigeration to have all light and power companies actively engaged in the merchandising of these appliances," said Mr. Nellor. "We all know the place electrical refrigeration should occupy in the home, yet an analysis shows only about nine per cent of the homes in this city have such refrigeration. That means there is yet much to be done along the line of education before the light will penetrate to even one-half of the homes of this city."

"Why do you say that electrical refrigeration should be sold by the light and power companies? How will that aid the local dealer? Is it not the generally accepted theory that all such organizations are opposed to the best interests of retailers of electrical appliances?"

"It may be true that such statements are made and too often believed," answered Mr. Nellor, "but I am afraid those making such statements have not fully analyzed the field of today. It takes money in large quantities to educate the people thoroughly along entirely new lines. Electric refrigeration is yet in its infancy, consequently education is needed. No one retail firm, or several of them, for that matter, could afford to do all the advertising needed at this time to put over a real selling campaign. Here is where the electric light and power companies enter the field as retail merchants. These companies have the finances to put over a real educational campaign. Not only that, but the most of them have thoroughly organized selling forces that can, and do, start the ball rolling.

Educating the Public

"Publicity of the right kind is a great educator. Large organizations of today generally have the best promoters that money can secure. This is true of the electric light and power companies, especially where they have entered the merchandising field. The Nebraska Power Company of Omaha has always been very fair in this respect, and I have personally found this company an actual aid to us in selling electrical refrigeration. I would much rather have that company in the retail merchandising field than otherwise. It is a real aid in educating the people to the point where electrical refrigeration will be accepted as the correct thing in all homes.

"Then I feel it does not do to 'have it too soft.' Stiff opposition is one of the greatest stimulants in the world to the real sales manager. It causes him to think, and that is absolutely necessary, if you would win. It is up to you to develop the best selling organization in the field. If you fail, it should be charged against you. Then, most of the electric light and power companies in the retail field would drop out tomorrow if others would do sufficient selling to give the service company the load desired. Public service corporations must have a peak load at all times in order to give an acceptable service to the people at reasonable rates.

"Let the local dealers supply that load and, I venture to say, three-fourths of the companies now merchandising would quit the field. Now, is it plain that where you do not desire the light corporation to enter the retail field in your territory, the thing to do is to gather around you such a wonderful selling organization that there is no need for the company to enter the field. Do the selling job thoroughly. I yet insist, however, you need the power company in the retail field. This is true now and will be until the educational campaign is completed."

Big Fellows Help

The Iowa-Nebraska Light and Power Company, of Lincoln, is one of the largest selling agencies in the territory covered by the Storz Electrical Refrigeration Company, which handles the G. E. refrigeration for all of Nebraska and the west third of Iowa. The Iowa-Nebraska has a strong selling organization in Lincoln, under the management of Stanley Taber. In all towns supplied by that service corporation Mr. Taber superintends the retail selling of the G. E. refrigerators, as well as other electrical appliances. That means Mr. Nellor has the aid of two large light companies in his territory, if we accept his views in regard to the service company at Omaha. The Nebraska Power Company is selling Kelvinator refrigeration in Omaha, so it comes in direct competition with other local dealers, yet Mr. Nellor says it is a direct aid to him.

Others in Agreement

E. B. Williams, selling electric washers and ironers, is of the same opinion as Mr. Nellor, so far as regards are power companies entering the retail field. He admits the advertising by the power company opens up the field for him, which he could not afford to do alone. "What I need do is to always be awake and enter into the campaign with all my force. Strike while the iron is hot," said Mr. Williams, "and in that way reap your share of the trade with the least possible effort and expense. I could not afford to do the necessary amount of advertising needed to 'make a killing,' and here the power company comes to my aid by taking the job off my hands."

The Hodge Electric Company, selling washers, ironers and radio, follows out the idea stated by Mr. Williams. Any publicity is looked upon as a help in the selling game by these men, and they are only too glad when some one like the power company puts on a real advertising campaign. The company stands the expense and the other retailers reap a large part of the business.

TRAINED SALESMEN

MECHANICAL refrigerator salesmen are trained men whose sales are sufficiently large to justify their employers in spending a considerable sum of money to fit them to intelligently handle their product. The ice delivery man, as has been mentioned before, is engaged for a different purpose than "salesmanship," and the ice merchant is handicapped in no uncertain fashion.—*Refrigerating World.*

BOSTON DEALERS LISTEN TO YOUNG OF MAJESTIC

(Concluded from Page 1, Column 3)

orders with New England manufacturers, and after installation of all equipment which has been ordered, Majestic Household Utilities Corporation will be equipped to produce 4,000 refrigerators per day. It is believed at this time that when July rolls around the new factories will already be operating on day and night schedules."

Majestic Distributors, Inc., Boston, Mass., have leased additional space for handling the electric refrigerator. Dealers have responded in good numbers to the announcement of the new product and franchises will be allotted as rapidly as possible for New England selling. Edward H. McCarthy is general manager of Majestic Distributors, Inc., Jerome Rutherford, general sales manager.

NEW YORK PLANNING TO AMEND PRESENT CODE

(Concluded from Page 1, Column 2)

the proposed amendments except the provision to have the present code considered as not retroactive. Representatives of the Board of Health sustained the remarks made by Mr. Michaels. E. T. Williams, representing the Servel Company, spoke at length, also sustaining Mr. Michaels, except on two minor points.

Representatives of various other manufacturers also spoke, all urging that the present ordinance be not made retroactive.

The chairman, Frank McGary, asked many pertinent questions on the subject of safety. He called on Fremont Wilson to suggest any changes, and Mr. Wilson said that in his opinion the retroactive clause should be called into force only when and if the Fire Commissioner found by actual examination that parts of equipment installed before Dec. 13, 1927, were in a hazardous condition.

Upon inquiry by the chairman, no one appeared in favor of the amendments, except as stated with regard to the retroactive clause. The hearing was adjourned subject to executive session of the Committee on General Welfare.

HEATING AND COOLING THE HOME

HOMES are heated with gas. Food in homes is cooled with gas in some of the new refrigerators, a gas flame doing the work done in other cooling systems by means of an electric current.

It is an obvious step to seek a combination of the two processes. A gas company man is experimenting with a system of heating and cooling a house in winter and summer, respectively, by means of a single gas-operated plant.

There is no evident reason why such a thing cannot be done. And if the system worked, the ice box would probably become a mere branch of the general system. The same furnace would keep everything in the house cool; or if you prefer, the same refrigerator would keep everything warm.—*Rochester Post-Bulletin.*

NOVELTY FEATURES BIG FLORIDA SPRING DRIVE

By Jack Wooten

IN a recent six weeks refrigeration campaign, the Florida Public Service company, a subsidiary of the General Gas & Electric Corporation, and a part of the Associated Gas & Electric System, sold 330 Kelvinators, or 449% of their original quota. Part of the success of the campaign was due to "hard working" and "conscientious efforts," but a greater part of this success was due to the enthusiasm instilled in all employees participating in the campaign.

Employees in the entire Florida Public Service Company's territory, which extends for a distance of approximately 180 miles, were divided up into teams according to districts. Each team was given a quota and prizes were offered to the team that made the greatest percentage of its quota. Bulletins were sent out each day showing the progress of the campaign and credit was given each team for the number of refrigerators sold on that day. Towards the latter part of the campaign the various districts participated in what was designated as a Bowling Tournament. So many points were given for each refrigerator sold, and the records of each district was sent out with the daily bulletin.

Although every team managed to keep well ahead of its quota each day, it was not until the bowling tournament was under way that the campaign progressed by leaps and bounds. It was stipulated at the beginning of the bowling tournament that at the conclusion of the campaign there would be a dinner tendered to each employee who had been instrumental in putting the Refrigeration Jubilee on top. It was further stipulated that the district superintendent in the district which had the highest score at the end of the tournament would have the privilege of cutting the shirt tail of the district superintendent whose district had the lowest score in the bowling match. This idea had a tendency to make every employee work harder in order that he might be able to save the shirt tail of his superintendent.

The end of the bowling tournament revealed the fact that the Orlando district had won and that C. B. Hayes, district superintendent, of that district would amputate the shirt tail of W. J. Clapp, superintendent of the Eustis district, whose three teams had the lowest score. There were several hundred at the dinner and although all of them were looking forward to the shirt tail cutting, they did not expect several other surprises which were given them.

Mr. Hayes, dressed as a surgeon, when the proper time came, proceeded to perform the operation on Mr. Clapp's shirt. Armed with a butcher knife and with several attendants trailing behind, Mr. Hayes, in a very thorough manner, completed his duty. Everyone seemed to get a big kick out of the ordeal through which Mr. Clapp had to undergo, and they thought all the fun was over when quite suddenly a policeman entered the Country Club dining room, approached Mr. Hayes and informed him that he had a warrant for his arrest. The warrent charged him with malicious destruction of property and public mortification and was based on the amputation of the shirt tail from the person of another, Bill Clapp of Eustis. The warrant was read and it looked for a time that the accused would have to wave his right to remain at the banquet. The company attorney was present, however, and he succeeded in persuading the officer to allow Mr. Hayes to continue enjoying himself at the dinner.

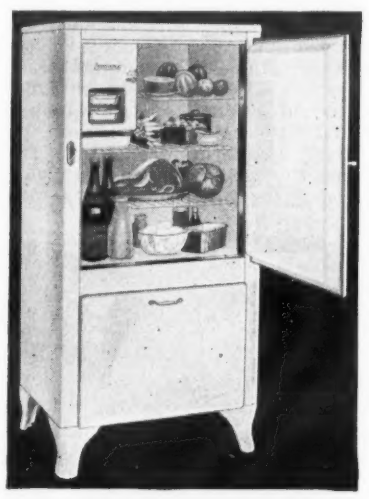
Again the employees thought the fun was over but in about twenty minutes two newsboys entered the dining room shouting "Jubilee Extra," "Jubilee Extra," "All about Clifford B. Hayes being arrested for amputating Bill Clapp's shirt tail!" Everyone looked around as the newsboys rushed through the hall distributing the papers. So real was everything that in the confusion some of the young men gave the boys a nickle for the special edition. The entire front page was given over to information on the Refrigeration Jubilee. In fact practically every detail of the campaign was outlined in the special edition. Some of the stories were humorous and some serious, but all of them were well received and thoroughly digested.

In getting out this special edition, officials of the Florida Public Service Company had a three fold purpose. First, it showed that the efforts of the employees, in putting over the refrigeration campaign, was fully appreciated by the company. Second, it was felt that by giving the employees something unique and original that it would act as a stimulant in conducting future campaigns by the company. Third, copies of the special edition were sent to the other properties of the Associated Gas & Electric system with the thought that they might get some idea from it that would be helpful to them in their scheduled merchandise campaigns.

The Florida Public Service Company's Refrigeration Jubilee was in the form of a "Cold Air Derby" to Admiral Byrd at the South Pole. Each district was represented by an aeroplane piloted by its district superintendent. The Jubilee was a forerunner of the Associated Gas & Electric System's Refrigeration Jubilee which opened on April 15 and closed May 31. It was conducted by every property operated by this company. Progress of the race was shown on a map of the western hemisphere showing Admiral Byrd at the South Pole as the goal. These maps were posted at a conspicuous place in each district.

ZEROZONE BRINGS OUT A MEDIUM PRICED UNIT

ZEROZONE CORPORATION of Chicago announces two new models of electric refrigerators which are made to sell to a low priced market.



Model 25 Zerozone

The Model 25 Zerozone is a single door job built especially for small kitchens where space must be considered. It is known as a package unit. The refrigerator comes complete in a crate and is ready for instant installation by merely opening three valves. The list price is $149.50.

The compressor is a standard precision built Zerozone and is housed at the bottom of the cabinet. The freezing unit is of the flooded type. Following are the specifications of the Model 25: steel cabinet 52½" high, 24" wide, 23" deep, porcelain interior, enameled exterior, 8¾ square feet of shelf area, 4.3 cubic feet net food storage capacity, temperature regulator within easy reach, chromium plated hardware, broom high legs, two ice cube trays.

Model 35 Zerozone

The Imperial Model 35 is a two-door refrigerator of larger capacity but of the same general construction as the Model 25. The steel cabinet is 54" high, 30" wide, 20" deep, and has 10.65 square feet of shelf area with 5.35 cubic feet of net food storage capacity. It comes with three trays for making ice cubes and frozen desserts. The list price of this model is $179.50.

SEABOARD UTILITIES OPENS NEW BUILDING

Alexandria, Va.—A. W. Higgins, formerly executive vice president and general manager of the Virginia Public Service Co., for many years one of the distributors of Kelvinator, and now president of the Seaboard Public Service Co., acted as host to a company of men who journeyed to the old Southern city adjacent to the national capital to lend their presence to the opening of the company's new building.

Among those present were Martin Insull, one of the outstanding figures in the utilities field in America and president of a number of companies representing the vast Insull group; Harry W. Reed, president of the National Electric Power and Electric Management and Engineering Corp., and Tom Roach, general commercial manager of Electric Management and Engineering Corp. Representing Kelvinator were H. W. Burritt, vice president, J. S. Sayre, sales manager, and Campbell Wood, director of utilities.

FORRESTER NOW IN CHARGE OF SEATTLE WAYNE SALES

Seattle, Wash.—J. P. Forrester has been appointed as sales manager of the Washington Home Equipment Company of Seattle, which is the distributor in this territory for Wayne electric refrigerators.

DES MOINES RADIO CO. SELLING KELVINATORS

Des Moines, Iowa.—The Levine Radio Company, with offices and showrooms at 9th and Locust Streets, has been named a dealer for Kelvinator.

BIRMINGHAM GAS CO. CELEBRATES

Birmingham, Ala.—The Birmingham Gas Company celebrated its first anniversary recently. The company was organized last May, taking the gas franchise from the Birmingham Electric Company. Upon opening for business last year there were two Electrolux refrigerators in Birmingham. Upon the day of the first anniversary there were 947 machines in Birmingham homes.

EDWARDS LEAVES G. E.

Cleveland, Ohio—L. R. Edwards, who has been advertising manager of the Electric Refrigeration Department of the General Electric Company for the past three and a half years, has resigned, as of June 1, 1930. After a vacation in Iowa, Mr. Edwards will again enter the advertising field.

BUHRING
WATER PURIFIERS

have been sold since 1891. During these 39 years they have been imitated in appearance, but never equalled in quality and performance.

●

Easily connected to all types of Electric Coolers

GUARANTEED
to remove taste, color and odor.
Will operate under any water pressure.

●

For Information Write

BUHRING
WATER PURIFYING CO.
40 Murray St., New York City

Representatives

Allen-Buhring Water Purifying Service, Chicago, Ill.
Boston Filter Co., Boston, Mass.

Any owner can tell you

in 3 words

why there's a nation-wide swing

to ELECTROLUX

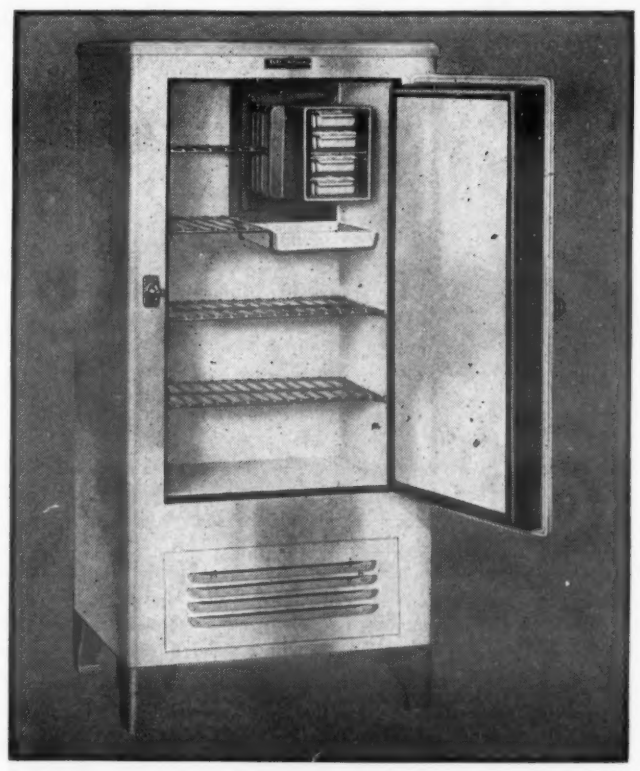
THE first word is . . . **SILENT.** And when owners say Electrolux is silent, they are thinking of pleasant-to-work-in kitchens. Kitchens that are absolutely free from distracting sounds. Because Electrolux operates noiselessly . . . today . . . and years from today. Only a tiny gas flame and a small flow of water are the "machinery." With no moving parts to cause friction or vibration.

The second word is . . . **ECONOMICAL.** There are many owners who tell us they notice no appreciable increase at all in gas bills since installing Electrolux. Others, more careful about checking such things, find that Electrolux usually costs less than 25¢ a week to operate. And in every case, they are unanimous in praising the big saving Electrolux makes possible on ice-bills . . . the way it keeps food fresh longer.

The third word is . . . **DEPENDABLE.** Never having to worry about its behavior, is one of the big joys in owning an Electrolux. The same constant refrigerating cold, plenty of pure, sparkling ice-cubes . . . day after day, year after year, without a hitch. That's what housewives want. And tests made by leading home-institutes find no reason why Electrolux should ever wear out.

From coast to coast, the swing to gas refrigeration is on. City after city is falling in line with Electrolux. Housewives and home-owners are insisting upon the only automatic refrigerator that offers the three exclusive advantages . . . silence, economy, dependability. This means *your opportunity* to share in the biggest sales increases in refrigeration history. *Because Electrolux is the choice of the hour . . . and of the year!*

A few desirable franchises are still available. For information, write, wire or telephone Electrolux Refrigerator Sales, Inc., Evansville, Ind.



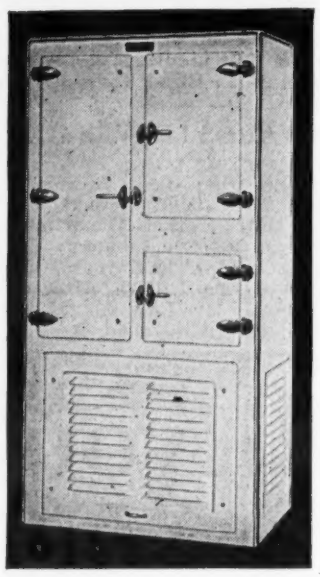
A tiny gas flame takes the place of all moving parts

NOISELESS . . . AMAZINGLY INEXPENSIVE *to operate. These two facts are prime reasons for the great and growing acceptance of Electrolux Gas Refrigerators. Kitchenette Model, one of the most popular sizes, is shown at right.*

ELECTROLUX

THE *Gas* REFRIGERATOR

"It was built by BOHN"



The handy base cabinet may either be used for refrigerating machinery or the storage of cooking utensils, canned goods, vegetables, etc.

The name BOHN is our warranty that the finest materials obtainable have been utilized by skilled craftsmen and refrigeration engineers to build for you this beautiful and scientific product—an all-porcelain BOHN refrigerator.

BOHN installations include many of the leading hotels, restaurants and hospitals in America.

BOHN refrigerators are used exclusively on all Pullman-built railway dining and buffet cars.

The United States War Department has purchased hundreds of all-porcelain BOHN refrigerators for our army barracks and battleships.

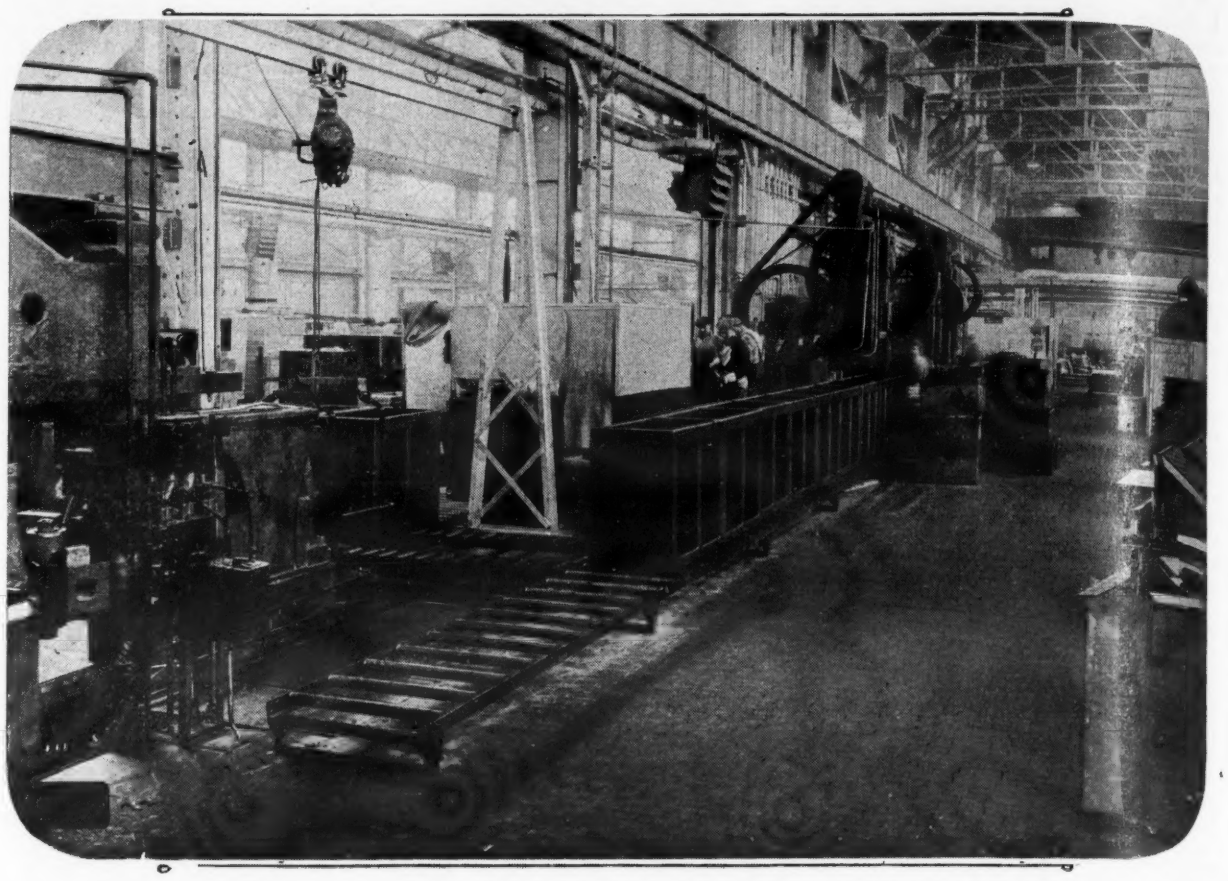
In choosing BOHN refrigerators, discriminating home owners throughout the country have given BOHN a representative list of which any manufacturer might be proud.

Write for details of the remarkably low prices that are now prevailing.

BOHN REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

Efficient Manufacturing Methods

G. E. PLANT AT ERIE IS EQUIPPED FOR



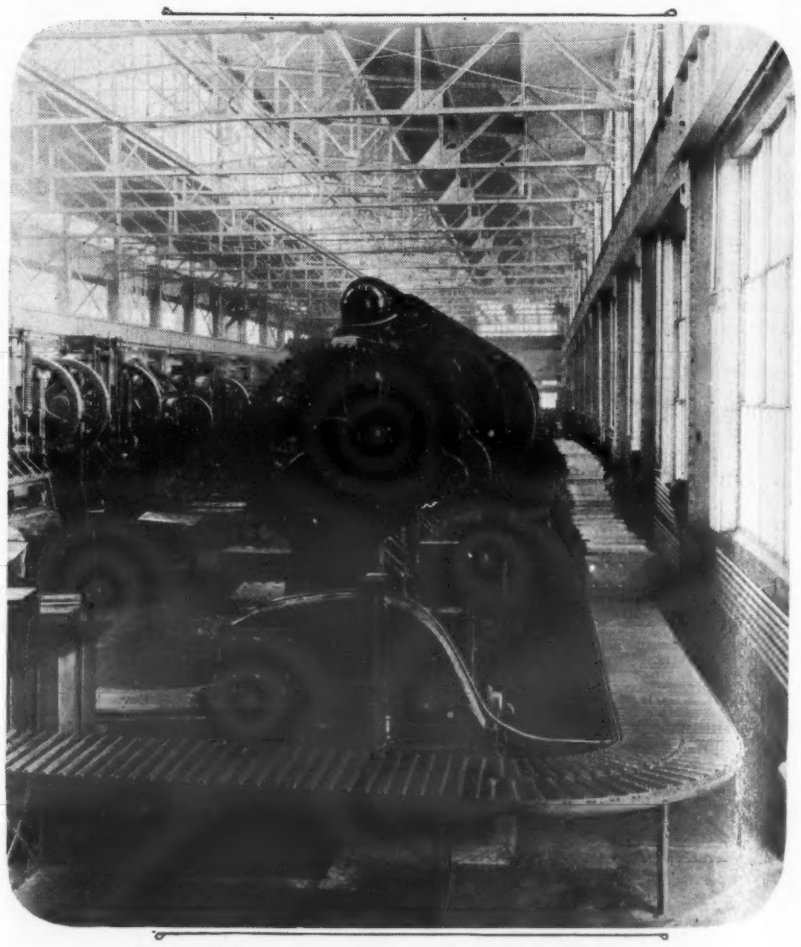
Straight Line Production

A TRIP through one of the General Electric Company factories manufacturing refrigerators would convince anyone of the fact that this is a day of efficiency, a day of simplified manufacture and a day of labor-saving machinery in the shop.

Here one would be impressed with the continuous flow, or straight line production, and one would realize clearly how modern equipment goes hand in hand with large volume in manufacture.

Conveyors, of course, play an important part in making for ease of operation and in eliminating waste motion and effort. Conveyors are at work from the time the steel sheets are taken to the first press operation, to the time when the finished refrigerators are packed and crated for shipment.

After final forming, inner liners are placed on graded roller conveyors and taken to automatic welding machines, where bottoms are attached; then they pass to the inclined belt conveyor which lifts them to the proper elevation to be fed into the sand blast. Leaving the sand blast, the inner liners are conveyed by means of belt conveyors to the enamel department, where they receive successive coats of vitreous enamel and are passed three times through the continuous furnace on a trolley conveyor. Outer cases, after leaving the sand blast, are placed on a trolley conveyor and pass successively through spray



A Battery of Large Stamping Machines

UNIT CONTROL

The NEW PENN TYPE J

TEMPERATURE, PRESSURE OR VACUUM SWITCH

•

COMBINES SEVERAL CONTROLS INTO ONE COMPACT INSTRUMENT

In keeping with the trend of the electric refrigeration industry toward even greater simplicity in the construction of ice machines, the New Penn Type J for Domestic Units combines the functions of several switches into one highly perfected controlling device. ONE DIAL GIVES COMPLETE CONTROL. Its movement in half circle provides outside temperature selection to suit manufacturer's specifications without altering the original factory setting. The unit control dial is also used for starting and stopping when defrosting and resetting of the switch if the thermal overload protector has opened the circuit. Type J is also equipped with a differential and range adjuster.

Dependable motor protection is assured. The thermal overload protector is designed to compensate for changes in room temperature. It is impossible to close the circuit manually with the unit control until the thermal overload protector has cooled for resetting.

You will find Penn Type J unusually adaptable to your domestic units because it is quickly accessible and easily mounted. Bayonet type contacts eliminate the necessity for entering the switch and consequently cut installation costs. The mounting is quite simple, particularly handy, and may be done quickly.

Penn Type J can be secured in a variety of models to meet all domestic refrigeration requirements. It is rated for a maximum of 1/3 H. P., A. C. or D. C., and supplied in various models for special applications. Attractively finished in a Bakelite case of high dielectric strength, practically air-tight, and vapor-proof. A post card will bring you further information and complete specifications. Address,

PENN ELECTRIC SWITCH CO.
DES MOINES, IOWA

Penn Controls are manufactured by an organization of proven engineering ability and are used as standard equipment on many of the nationally known electric refrigerators.

NATIONAL PIPE BENDING BUSINESS 25% AHEAD

New Haven, Conn.—A production increase of 25 per cent over the same period last year is reported by W. G. Marks, secretary of the National Pipe Bending Company, makers of cooling and refrigerating coils and headers. The company is now making coils of all sizes for refrigeration equipment manufacturers in the United States, Mexico, Canada, and Russia, according to Mr. Marks.

COPELAND DISTRIBUTOR IN NEW HOME

Houston, Tex.—Formal opening of the new home of the Rice Day Company, new distributors in southwest Texas for Copeland, was held here a short time ago. Officers of the firm, which was recently organized, are: George F. Day, president and general manager; B. B. Rice, vice-president, and Calder Rice, secretary and treasurer.

The new firm is founded by men who have been a successful part of the business life of Houston for a number of years.

NEW SALES MANAGER JOINS EVANSVILLE FIRM

Evansville, Ind.—W. H. Sandefur has been named sales manager of the Frigidaire sales and service department of the Stahlschmidt Piano Company.

NEW BRANCH IN NEW BRITAIN

New Britain, Conn.—Newton-Parsons Company, 121 Ann street, Hartford, representing General Electric refrigerators, has opened a branch showroom at 39 Arch street, this city.

Produce Efficient Refrigerators

HANDLING LARGE VOLUME OF WORK

Placing the Inner Liner

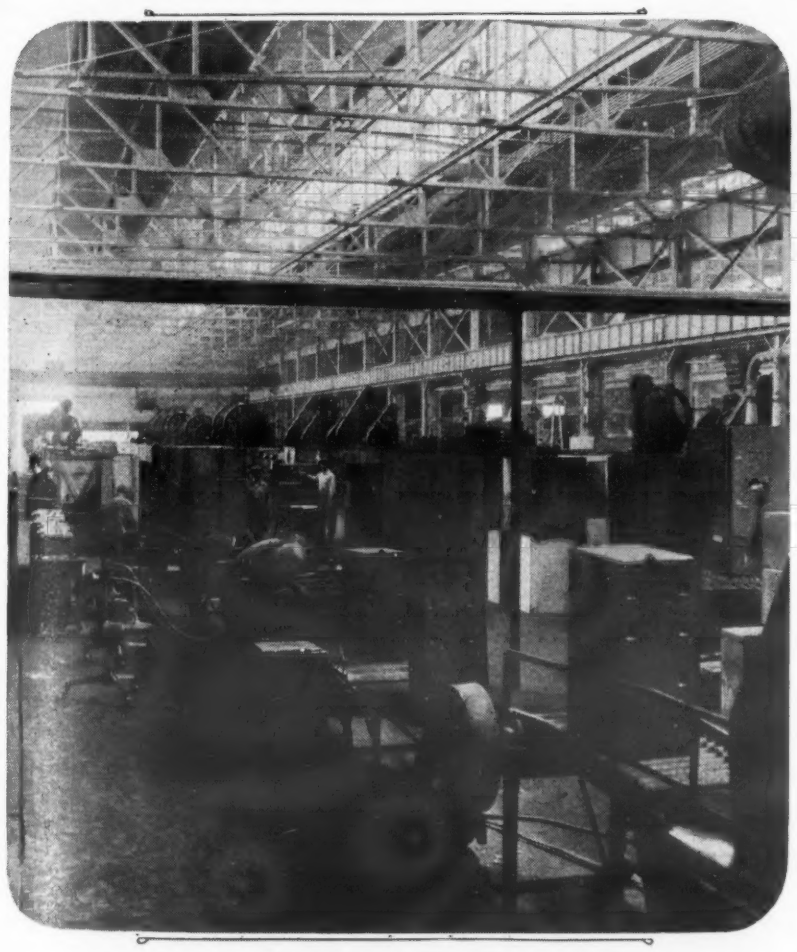
booths and drying ovens, where the Sanek finish is applied.

Slow-moving wood pallet conveyors carry the outer shell to inspectors after enameling, and to workmen who place in position the insulating medium. Special tip-up sections are provided, by means of which the cases are tipped over onto a padded pallet on which they ride until delivered to the final assembly line. Further cleaning and inspection operations are carried on and the legs bolted on as the cabinet passes down the line of the roller conveyor.

After the inner liner has been placed into the outer case, by means of an air-operated ram, the cabinet is pushed across to the slow-moving pallet conveyor assembly lines where textolite strips are put on, doors fitted and assembled to cabinet, and final cleaning and inspection done. Overhead trolley conveyors carry parts to and from the drying oven.

Along the continuous door assembly line, special turn table type pallets are mounted on a chain conveyor, on which the assembly work is done. The finished door is taken off this conveyor at the proper point for mounting on the cabinet which is traveling along on the main assembly conveyor close by.

Completely assembled, the refrigerator is crated on a pallet conveyor and then carried on a roller conveyor to be loaded on cars.



At Work on the Inner Liners

KELVINATOR DEALERS READY FOR "ICE TEST" WEEK

Detroit, Mich.—Kelvinator distributors and dealers will stage a fast-freezing week June 5 to 14, inclusive.

A feature of the week will be demonstrations of "the thermometer test"—taking boiling water and reducing it from 212 degrees to 32 degrees in less than ten minutes, automatically. Freezing water to ice in 80 minutes will be demonstrated.

BROOKLYN REPORTS RECORD ELECTROLUX SALES

Brooklyn, N. Y.—Refrigeration sales records seemingly mean about as little to the retail sales group of the refrigeration division of the Brooklyn Union Gas Company as golf scores mean to Bobby Jones.

Not content with setting a new "high" of 206 Electrolux refrigerators for April, the retail salesmen of this Brooklyn Utility increased their activity to such an extent that they will practically double the figures made during May of last year.

During this 15-day period, the highest man sold 23 Electrolux, the lowest sold 8. The records of the individual salesmen are as follows: Conklin 23, Roberts 19, Ollivier 18, Martin 13, Salmon 13, Howe 10, Morrow 10, Allen 9, Jones 8, Lee 8, Stanton 8; sales made by other employees, 16.

TUCKER COMPANY OPENS NEW SALESROOM

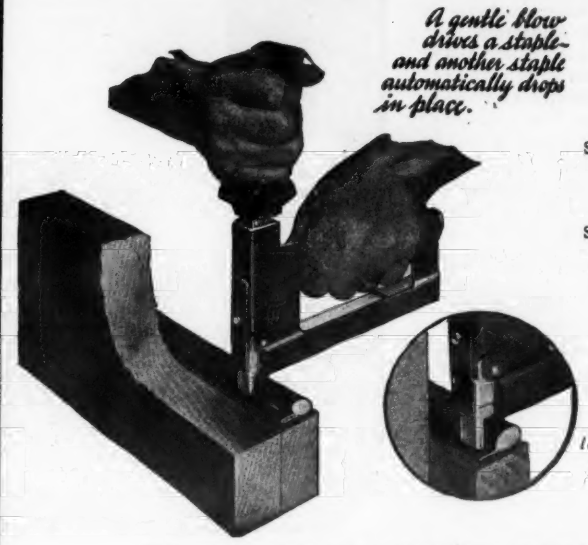
Bridgeport, Conn.—The Tucker Machine Company has opened a Bridgeport salesroom at 565 Fairfield avenue, handling Kelvinator, in the heart of "Refrigerator Row." The concern's former quarters in Easton, a suburb, are retained for assembly and testing.

STARK ELECTRIC CO. BRANCHING OUT

Monessen, Pa.—The J. W. Stark Electric Company, representatives of the General Electric refrigerator in this district, has opened a store in Monessen. It is located in the Olympic Theatre Building.

Mr. Stark has been engaged in the refrigerator business for the past 11 years, nine as a dealer for Frigidaire, and the past two and a half years with the General Electric Co. He is thoroughly acquainted with the refrigeration business.

GASKET QUICKLY APPLIED



A gentle blow drives a staple—and another staple automatically drops in place.

SHIPPED ON 10 DAYS' TRIAL

Should be in the tool kit of every installation man, service man, repair man.

8 TIMES FASTER—MORE SECURE

Ideal for tacking shipping tags and wherever tacks are used.

MARKWELL NO. 176, AUTOMATIC REFRIGERATOR TACKING MACHINE, $7.50 EACH

STAPLES PUT UP 5,000 TO A PACKAGE

176 "B" Steel, per pkg.....$2.75 176 "BTC" Copper, tin plated, per pkg.....$3.25
176 "BC" Copper, per pkg... 3.75 176 "BM" Monel, per pkg..... 5.50

PRICES ON STAPLES IN QUANTITY ON APPLICATION

Prices are F. O. B. New York

R. N. E. MARKWELL MFG. CO. INC.

200 HUDSON STREET NEW YORK, N. Y.

AIR COOLING

GIVE AND GET

An age-old truth Emphasized by the PEERLESS COOLING FAN

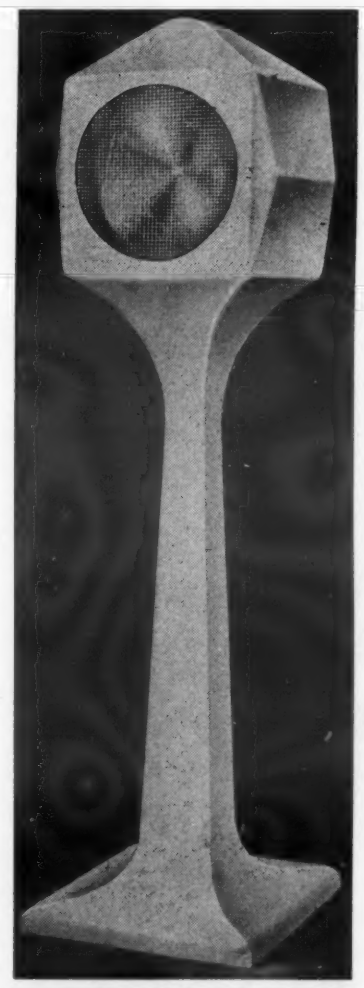
Borrowing from the museum of epigrams we find that "we cannot get without giving." Therefore, it must be true that "the more we give the more we get." Still treading on the line of loaned wisdom we learn that "a business man's closest thought is profit." Logic leads us to believe, then, that if we can

Give Greater Business

we shall get profitable business. That is just exactly why the PEERLESS COOLING FAN is the opportunity of the year for every progressive dealer and distributor in America. The PEERLESS cools and de-humidifies the air in the restaurant, store, office and home. It creates a vigorous, business producing atmosphere that is as cold and dry as the cooled air in a modern theatre. The PEERLESS eliminates the summer slump in every business and, most especially, in your business.

PROFIT with PEERLESS

Fall in step with the forward march of scientific progress. Be the first to announce this product of scientific research and mechanical perfection in your locality. Get all the details, immediately. They will show that the PEERLESS COOLING FAN is to-day's necessity and today's opportunity.



The Peerless Cooling Fan cools the air 8 to 16 degrees, depending on the outside temperature. It blows 1200 cubic feet of de-humidified, chilled air per minute. The pedestal type takes the full capacity of a one-ton ice machine. In larger installations a series of Fans can be connected in multiple to a larger capacity ice machine.

PEERLESS ICE MACHINE CO.

515 W. 35th St. CHICAGO

WRITE FOR DETAILS

BRITISH FRIGIDAIRE MEN RALLY FOR BIG SESSION

GREAT enthusiasm attended the holding of the Fourth British Frigidaire Salesmen's Convention in London, England, recently at the Rudolf Steiner Hall, Baker Street.

The convention was opened by E. L. McGurk, General Manager of Frigidaire, Ltd., at 9:15 a. m. In a short introductory speech, Mr. McGurk welcomed the 350 or so members of the audience to the convention, and expressed pleasure at seeing among them so many who had attended the previous Frigidaire conventions.

The first item on the program was a grocers' demonstration. The audience followed this with the keenest attention, especially as the grocery business in Great Britain is an extremely difficult field for the sale of refrigerating equipment.

As over 95 per cent of houses and 75 per cent of motor cars are purchased today on the installment plan, the next talk on hire purchase plans for Frigidaire was to the point. A. J. R. Bridges showed how the facilities that Frigidaire offered for the purchase of their product under General Motors Acceptance Corporation enabled individual salesmen to increase the volume of business they could do.

The next scene conveyed an appropriate lesson to the assembled salesmen, none the less because it was presented under the guise of fun. Professor Beedleum personally demonstrating a queer-looking "Refrigerator" in his academy to a nondescript assortment of pupils, provided good comedy, which was not wasted on the audience. The fact that the Frigidaire refrigeration school, on the other hand, is a serious affair, in which the best possible training is given to insure success in future sales efforts, was a moral that could not fail to have been drawn and appreciated by the salesmen present.

The hydrator and cold control in the new porcelain cabinets for 1930 came in for attention in a talk by W. H. Ayres on "What is Frigidaire?" The word Frigidaire, it was pointed out, has appealed to the nation as a name that most appropriately conveys the idea of automatic refrigeration.

An average household demonstration that might have to be given by a salesman at any time was the subject of the next sketch, which showed how Mr. and Mrs. Black were converted by Mr. White, the salesman, to Frigidaire users. It was emphasized that Saturday afternoon is a splendid time to select to interview husband and wife together. The demonstration itself embodied an extensive use of the Frigidaire primer.

The convention adjourned for luncheon at Madame Tussaud's restaurant, nearby.

After lunch, A. Bodenham, sales promotion manager, speaking on "The Primer," proved the value of learning the demonstration verbatim, and applying it at discretion.

The profitable use of Frigidaire in the bakery and confectionery business in Great Britain was pointed out by Charles Dickson. He told the convention how Frigidaire could be employed in the storage of pastries, cakes and pies, and for the storage of the cream and fats used in the business.

How not to sell the butcher refrigerating equipment was the lesson conveyed in a humorous sketch entitled "Whole sale Slaughter." "Napoleon," a prize shorthorn bull (a part taken by Augustas Manning as the fore, and Harry Donovan as the hind), was destined for slaughter, but proving averse to the idea was more than a match for Mr. Briskett, who was assisted by his boy, the salesman, and the shop cashier. For the salesman it was an altogether "beastly" affair, but the audience enjoyed it and were fully warned as to proper selling methods.

E. J. Batchelor, manager of Frigidaire advertising department, in an interesting talk on "How Publicity Pays the Salesman," gave an impressive visual presentation of the schemes for advertising Frigidaire that are run throughout the year. Mr. Batchelor started with a clear stage; as he dealt one by one with the different methods used in appealing to the public through the trade, domestic and newspaper press, and by means of direct mail, window displays, signs, outdoor publicity, and exhibitions, large boards were brought on to the stage giving the facts and figures relating to each method for everyone to see. Five pretty girls then entered, one at a time, each carrying a board showing the salient points of the Frigidaire advertising campaign. On the other side of the five boards being exhibited, an unbeatable diamond running flush Nap. hand was revealed.

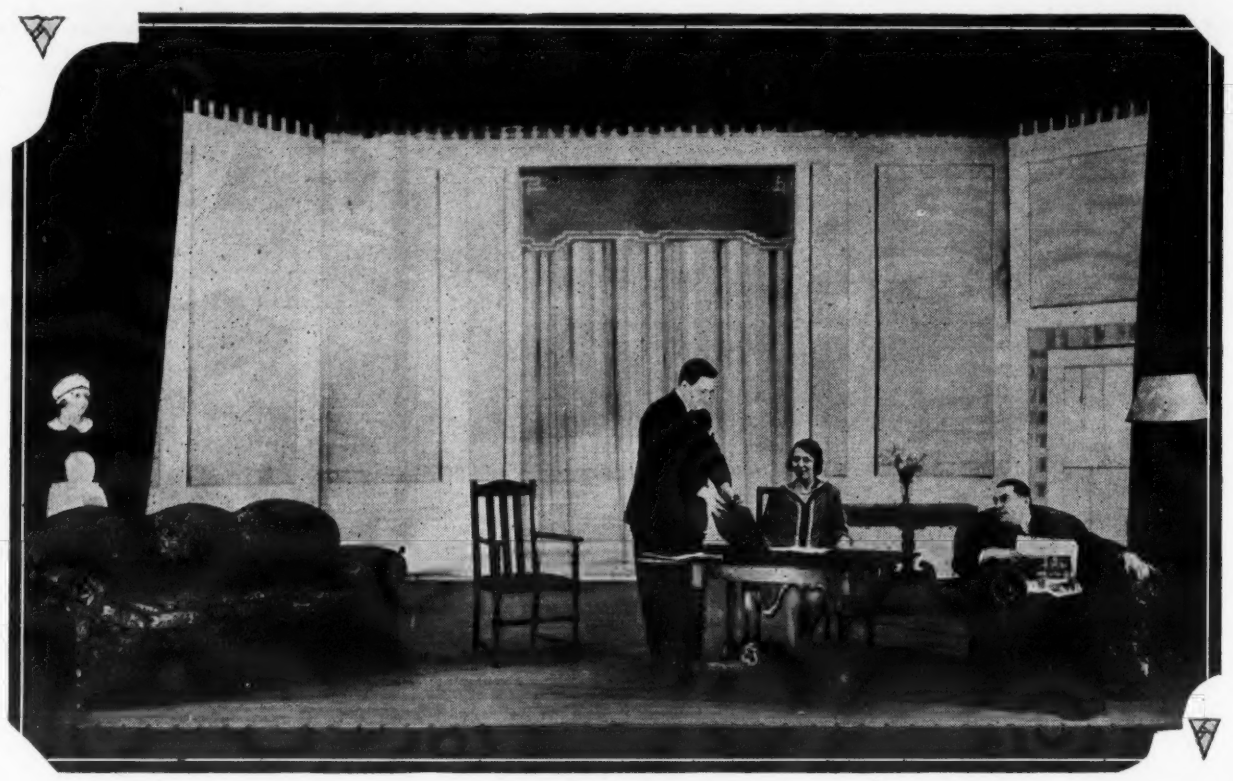
Other items presented were by L. Lazarus, speaking on ice cream, by W. J. Cawley, and by A. Bodenham, recording and analyzing the activities of two different salesmen over a period of "Two Days and a Night."

N. V. C. Turner introduced to the audience the well-known figure of "Old Man Quota," and explained the purpose for which quotas are set. Following, he spoke at some length on the European Frigidaire Club (which is the Frigidaire star salesman's club of Europe), and displayed charts showing the achievements of the various countries operating in Europe. Amid great applause, he announced that Great Britain had led last year with 32 members, and he had no doubt that the British organization would respond and lead the field again in 1930.

Closing the convention meeting, Mr. McGurk thanked the members of the Frigidaire organization who by their co-operation had made the meeting such a great success. Speaking of the good results experienced by the company during 1929, he said he expected a continuation during 1930, specially with the new hydrator to assist in bringing record business.

The convention banquet was held in the evening at the Savoy Hotel, with Mr. McGurk in the chair. The dinner was distinguished by many entertaining features, including a punchboard. Many salesmen had the privilege of punching for money prizes won during a six weeks' contest held immediately preceding the banquet.

Frigidaire's Thespians



Like Their American Brothers, the British Frigidaire Men Found the One-Act Skits Very Helpful in Putting the Idea Over

10,000 Sepco Electric Water Heaters Will Be Sold in 1930

Every electrified home which tolerates coal, wood or kerosene to obtain hot water is waiting for Sepco

to home owners living beyond the smoke and the gas mains of our large cities

Sepco is a guaranteed appliance—backed up by 15 years of satisfactory performance.

Photos by Aero Service Corp. Phila.

Sepco Automatic Electric

Standard for 15 Years

"Dealer Specialists"

If you have a live-wire sales organization, we offer you a virgin market. It is easy to sell Sepco—we cultivate the ground—you reap the harvest. There's a real margin in every Sepco sale, and our trained field supervisors will help you make them.

We want only "Dealer Specialists" whose sales record will assure us of proper representation.

Write for full details.

AUTOMATIC ELECTRIC HEATER CO.
General Sales Offices: 1524 Race Street Philadelphia, Pa.

The Old Boy in Person

Harlan and Godfrey Named Frigidaire Vice Presidents

Dayton, Ohio—Appointment of two new vice-presidents of Frigidaire Corporation was announced by E. G. Biechler, president and general manager, last week at a meeting of star salesmen here.

J. A. Harlan, for the last two years sales manager for the distributors' division, which represented approximately 70 per cent of domestic Frigidaire business, has been made vice-president in charge of sales, and E. R. Godfrey, formerly superintendent of the generator plant of the Delco-Remy Corporation at Anderson, Indiana, vice-president in charge of production.

Mr. Harlan, a civil and mechanical engineer, has been connected with General Motors since 1915, when, upon graduation from the University of Michigan, he joined the engineering department of the Buick Motor Car Company. In August of the same year, he came to Dayton and entered the service of the Dayton Engineering Laboratories Company. He designed this company's first farm lighting plant, which was placed in production the next year by the Domestic Engineering Company. In February, 1916, he was made assistant superintendent of this company, which later became the Delco-Light Company.

Right
J. A. Harlan
Vice President in Charge of Sales

Left
E. R. Godfrey
Vice President in Charge of Production

He succeeded Mr. Biechler as purchasing agent of Delco-Light in 1916. Afterward he worked for a time in the engineering department, designed an automatic farm lighting plant, and then was transferred to the sales department. When Frigidaire operations were transferred to Dayton from Detroit, he worked for two years in sales promotion and then returned to the engineering department to redesign an early Frigidaire model. This was a very successful model and there are hundreds of them still in use.

In January, 1923, he was transferred back to the sales department, and made assistant sales manager of the Delco-Light Company, under Mr. Biechler. When the latter was made president in 1923, Mr. Harlan succeeded him as sales manager. Mr. Harlan later became sales manager of the household division. A change in the Dayton sales organization in 1928 resulted in his appointment as sales manager for the distributors' division.

Mr. Godfrey was employed in the tool design department of the Remy Electric Company in 1913, soon after completing a course in a Nova Scotia technical school. In 1919 he left the Remy Company and went to the Mid-West Engine Company in Indianapolis, where he remained until 1924. He then rejoined the Remy Company and was assigned to Plant 2, the starting motor unit. Four years ago he became superintendent of Plant 4.

NEWTON-PARSON COMPANY IN NEW QUARTERS

Hartford, Conn.—The Newton-Parsons Co., 121-23 Ann Street, formerly located at 123 Ann Street, have now acquired and remodeled the adjoining store for the display of General Electric refrigerators. The new section is now showing the large models manufactured by the General Electric Company, and adapted for use in restaurants, hotels and for large families.

In addition to the acquisition of more display space, the company has opened a branch office and show room at 39 Arch Street, New Britain, Conn.

Recently equipped buildings with G. E. refrigerators and coolers include the State Capitol Building, the County Court House, Hartford Police Headquarters, the Hartford Public High School, and the Connecticut State Library building.

RAPID STRIDES

"Having been one of your early subscribers, let me congratulate you on the rapid strides your magazine has taken."
—Edwin G. Flohr, Allentown, Pa.

BUILDING PERMITS GOOD SOURCE FOR PROSPECTS

Milwaukee, Wis.—Quite different than the usual methods employed by electric refrigerator salesmen to find prospects is that used by a very successful Milwaukee man. He does not go from street to street looking for homes which display ice cards, and neither does he ask all his personal friends for help or tips of names of persons who have as yet no electric refrigerator in their homes. His method is quite different and is as follows:

In the city hall there are records which give names of all persons who take out building permits. He scans these for home builders, apartment builders and others. The addresses are given and he makes note of them. During the evening hours, and not during the daytime, when the future home or apartment builder is occupied with his work, he calls on him. Many sales have resulted because the salesman was on the job a day or two after a building permit was issued. Occasionally this man does not find time to go to the city hall for this information. To enable him to keep abreast of permits issued, he subscribes to a publication called the "Daily Reporter," which also contains this information, besides a great amount of other valuable data.

Occasionally it happens that a permit is taken out in the name of a party other than the actual owner. It is then difficult to discover the prospect. This is overcome by becoming acquainted with concrete block men, block factory owners and brick manufacturers. At the same time his list of business acquaintances is extended to include architects, roofers and furnace and oil burner men. From these, especially from concrete block makers, he gets leads on who is building a residence or apartment and where. Architects, as a rule, do not seem to care to give out information in advance, but occasionally, if one becomes well known to them, they do so. Brick makers and lumber manufacturers and dealers also have at hand information of value to a refrigerator salesman. They furnish the materials for new residences and apartments and often can give a man a lead.

This salesman has discovered that a home builder is usually so busy with details that often the wife is the person to interview at first. After the ground work has been done, she can, as opportunity presents itself, and when the husband is in the right mood to receive advice and information, lay the refrigeration plans before him. Should the salesman call when the husband is upset by untold details, bills, and the thousand and one other things which cause annoyance at this time, the refrigerator man has not a very good chance to make a sale. The prospect must be in the right mood and the wife can assist very materially in helping the good work along.

A real effort is made by this salesman to find out what the particular hobby of the prospect is. If it is fishing, then fishing is discussed and more often than not an invitation given to visit his summer home at a nearby lake. This man keeps up-to-date on all manner of sports, particularly golf and baseball, and can discuss any of them intelligently. He has found this to lead to many sales of electric refrigerators.

HARPER-MEGEE APPOINTS ADVERTISING COUNSEL

Seattle, Wash.—Harper-Megee, Inc., distributors of Copeland electric refrigerators in western Washington, has appointed the W. V. Mackay Company of Seattle as its advertising counsel.

Improvements and alterations are now being made to the offices of Harper Megee, Inc., at 2132 Fourth Ave., in order to care for the expanding business.

ANACONDA COPPER and COPPER ALLOYS

in commercial shapes for all manufacturing requirements

ANACONDA
from mine to consumer

ANACONDA Products comprise copper and copper alloyed with zinc, tin, nickel, lead, silicon and manganese in all combinations that can be wrought into commercial shapes. Products for the electric refrigeration industry include:

EVERDUR METAL (Trade-mark Reg. U. S. Pat. Off.)	An exclusive Anaconda Alloy of copper (96%), silicon and manganese, combining the strength of steel with unusual corrosion-resistance and ready weldability by ordinary methods. Used extensively for screws, bolts, etc., and for valves and fittings in contact with acids or refrigerants.
DIE-PRESSED PARTS	More uniform in shape and truer to size than sand castings, requiring little or no machining. Freedom from spills and blow-holes found in castings reduces rejections.
FREE TURNING BRASS RODS	For screw machine products; scientifically alloyed for high speed production.
MOULDINGS	Nickel-Silver and Brass for cabinet trim.

The American Brass Company embodies in Anaconda Copper and Copper Alloy Products the highest technical skill in manufacture with the accumulated knowledge and experience of more than a century.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

CALCO
Sulfur Dioxide

"Buy the best, by every test"

Cylinders - Drums - Tank Cars

THE
CALCO CHEMICAL CO., INC.
Bound Brook, N. J.

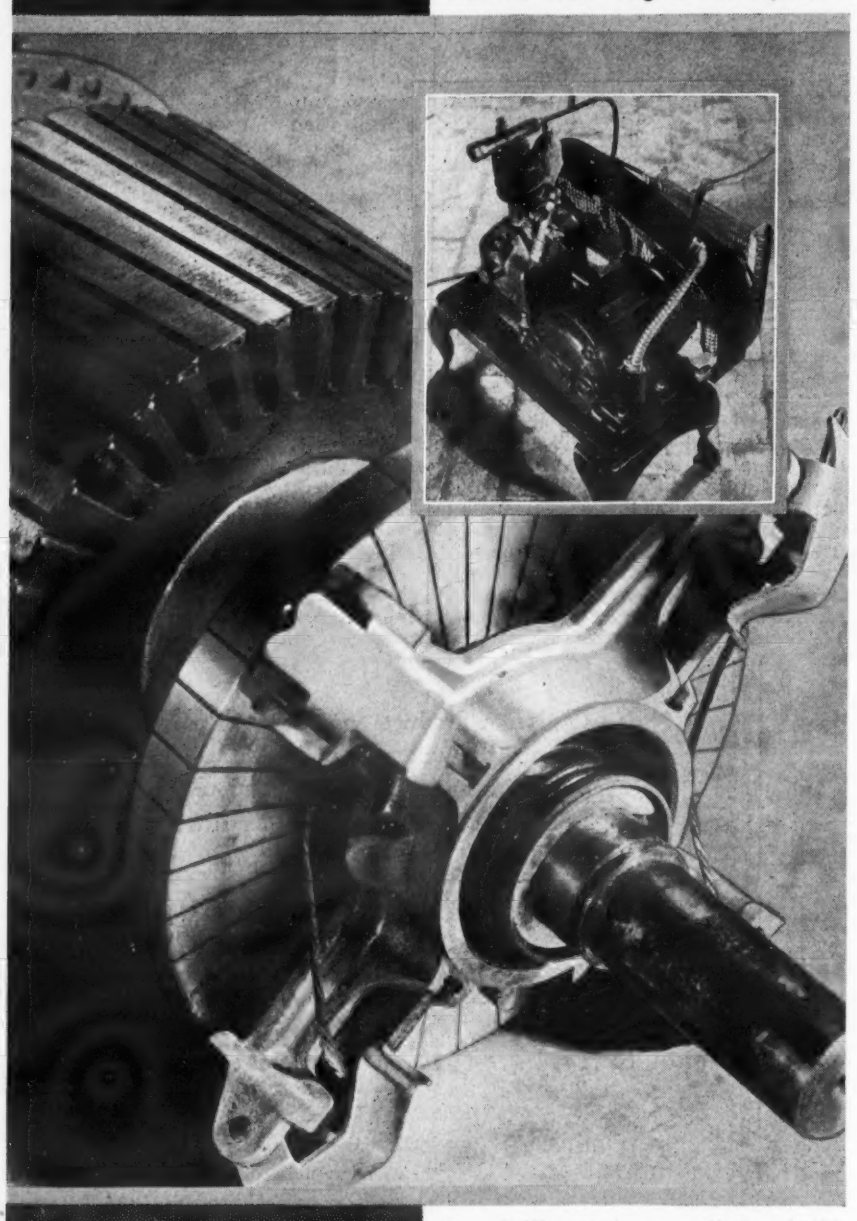
New York Boston Philadelphia

JOINS DOMESTIC ELECTRIC

New York, N. Y.—D. H. Theobald has joined the staff of the Domestic Electric Co. as sales promotion manager. He had been connected with the Frigidaire Corporation in Detroit for the past five years, serving in a number of executive positions.

Eliminate Motor Trouble

The motor should not be an appreciable source of service trouble or user dissatisfaction. Wagner small-motor performance has been improved to eliminate the motor as a source of trouble. Wagner Motors are designed for service to the home user . . . quiet, efficient, trouble-proof, compact motor construction. Check your requirements with the latest Wagner developments.



Wagner, Quality

Consult Wagner, because Wagner builds every commercial type of a. c. motor.

Literature on Request

WAGNER ELECTRIC CORPORATION

6400 Plymouth Ave., St. Louis

Sales and Service in 25 Cities

PRODUCTS . . . FANS: DESK, WALL, CEILING
TRANSFORMERS: POWER, DISTRIBUTION, INSTRUMENT
MOTORS: SINGLE-PHASE, POLYPHASE, DIRECT CURRENT

61-7532-5

CONTESTS KEEP BUFFALO UTILITY'S SALES AT PEAK

By Lois King Backus.

IN the eleven months from February, 1929, to January, 1930, more than $200,000 worth of electric refrigerators were sold by the Buffalo General Electric Company. This sale was consummated under the leadership of Harold G. Rahn, who at the beginning of that period was made sales manager of the Refrigeration Division of the company.

The figures for the sales are especially interesting in view of the fact that every refrigerator was placed in a private home in the Buffalo territory. Large contracts for apartment houses and the like are cared for by another department.

Mr. Rahn believes that success or failure in placing any product lies almost entirely with the salesmen. His force of ten to twelve men was chosen after the most careful study and investigation as to their qualifications for the particular sort of work he expected of them. Each man was given an intensive training of six weeks' duration and was thoroughly schooled in the various ways of selling electric refrigeration. This course includes not only salesmanship talk but the best demonstration methods as well.

Each morning from nine until ten o'clock, the salesmen meet with Mr. Rahn, and any difficulties that the men may have encountered during the previous day's work are taken up and explained. New ideas are talked over, and the men go out filled with determination and inspiration.

One day each week, two men spend inside the electric building. These shifts are a part of the regular routine. One of the inside men cares for the telephone work, and the other is in charge of floor demonstrations.

The salesmen are protected as to their prospects in follow-up work during a reasonable length of time.

Each salesman has a given quota, and Mr. Rahn inaugurated the bonus idea in the refrigeration division of the Buffalo General Electric. A contest takes place every sixty days, and at the end of each two months, the sum of three hundred dollars is divided among the five men who turn in the highest sales records. The top man receives $100; the second highest $80; the third $60; fourth $40; and the man holding fifth place $20. As soon as one contest is over another starts, and it is Mr. Rahn's plan to continue this procedure indefinitely.

The salesmen are aided by window displays, and these displays are uniform, the same idea being carried out at the main building and at the four branch offices of the Buffalo General Electric in various parts of the city. Floor displays are also a part of the general plan at each office, and newspaper advertising helps to back up the work of the salesmen.

While Mr. Rahn gives all of the credit for the steady increase in refrigerator sales to the sales force, there is little doubt that his guidance is largely responsible.

Mr. Rahn has the distinction of having brought the first Frigidaire to Buffalo, early in 1918. After spending several months in Detroit, studying the new "ice-less" refrigeration ideas, he was sent to Buffalo by General Motors and opened the first store to sell Frigidaire in that city. The store was small, only one type of "box" was made, and Mr. Rahn was the only salesman.

Since that time he has been connected with the sale of electric refrigerators in various capacities, and keeps in constant contact with the new developments.

Pioneer

Harold G. Rahn

Filtrine

Guaranteed **FILTERS** for Electric Water Coolers. *Pure, Clear Water.*

FILTRINE MANUFACTURING COMPANY
49 LEXINGTON AVE. Brooklyn, N.Y.
Manufacturers of FILTERS & COOLERS of all sizes.

HENDRICKS JOINS TOLEDO ELECTROLUX DEALER

Toledo, Ohio—Appointment of Walter Hendricks as supervisor of refrigeration sales is announced by A. C. Malcor, business manager of the Gas Company, 231 Huron street, exclusive Toledo dealers for the Electrolux gas refrigerators.

Mr. Hendricks has been identified in Electrolux refrigeration sales in Toledo for two years. Under his supervision a complete line of Electrolux refrigerators is being displayed in the company's office. The exhibit includes the nine Electrolux models, ranging in size from three to ten-foot boxes and embodying many new 1930 features, including cabinet design and improvements in the freezing compartment.

Mr. Hendricks reports that a very substantial gain has been made in the number of units installed in apartment houses. Twelve apartment houses have recently been equipped with Electrolux refrigeration and contracts for five others are being sought, declared Mr. Hendricks.

CAROLINA KELVINATOR CO. HOLDS CONVENTION

Greenville, N. C.—The recent convention of the Carolina Kelvinator Co. celebrated an increase of sales this year of one hundred per cent. That fact, according to District Manager J. K. MacCarthy, helped make the convention one of great optimism and enthusiasm. The meeting was attended by all of the dealers in Eastern North and South Carolina. James T. Little, manager, and E. E. Rawl, sales manager, of the Carolina Kelvinator Co., were with the party, as were Dick Owens, factory sales promotion department; J. K. MacCarthy, and H. F. Sharon, from the factory service department. A noon-day dinner was held at the Proctor Hotel, while the banquet was at the Rotary Club headquarters.

JOHNSON GOES WITH ELECTROLUX

Minneapolis, Minn.—C. R. Johnson, formerly with W. S. Nott Co., Copeland distributors, is now in charge of the apartment house division for the Minneapolis Gas Light Company, where he is selling Electrolux. Mr. Johnson has had a varied experience in the refrigeration industry, having spent several years with the Minneapolis Servel branch, and also with the Wisconsin Light and Power at Madison, Wis., selling General Electric refrigerators.

BAKER CO. TO REPRESENT KELVINATOR

Toledo, Ohio—The Howard C. Baker Co. has taken on the distribution of Kelvinators in Toledo and eleven adjoining counties in Ohio. Richard N. Woodman is general sales manager of the refrigeration division.

FRIGIDAIRE ADVERTISING GETTING GOOD RESPONSE

Dayton, Ohio—Inquiries from Frigidaire advertising for the first four months of 1930 were 90 per cent greater than they were during the same period of last year, factory figures show, and were 520 per cent ahead of those for the first four months of 1928.

Further evidence of a greatly increased public interest is the fact that the number of prospects' names sent into the factory for direct mail circularization is 150 per cent greater than for the same period last year. April names sent in by the field organization were 235 per cent greater in number than those of April, 1929.

On the basis of this increase as compared with last year's results, it is expected that the Frigidaire direct mail organization will circularize considerably more than 2,000,000 household prospects this year. Each prospect receives three attractive folders enclosed in high quality envelopes by first class mail.

One of the principal reasons for the success of the Frigidaire direct mail plan is that dealers are charged only five cents a name for these triple mailings, according to E. D. Doty, advertising manager. This amounts to one cent less than postage alone. The rest is absorbed by the distributor and the factory.

"Each Frigidaire dealer is expected to send in at least 30 prospect names a month for household literature circularization," Mr. Doty said. "These lists of names are recorded on the dealer's card as soon as received by the factory and acknowledgment sent both to the dealer and to the distributor. The latter is given a list in order that he may keep informed as to how much of a circularization his territory is getting.

"The names are then sent into the addressing room, where a battery of graphotype machines turn out an average of 65 address plates an hour each. The plates are then used to address envelopes, which are kept in bundles with the names of various dealers sending them. Each bundle of addressed envelopes is checked and the proper number of direct mail folders is run off with the dealer's imprint. Envelopes are then stuffed and stamped on a metered mail machine.

"The Frigidaire commercial direct mail campaign consists of a series of addressed and signed letters, applicable to virtually any business. There are 23 different sets of three letters each, used in this campaign. When a dealer sends in a list of names, the plates are made up on a compotype machine, which makes typewriter style addresses. These plates are separated into the various classifications and after a fac-simile signature plate is made up, the letters are addressed and signed, the completed letter being difficult to tell from one personally written to the prospect. The letterheads used in this campaign are imprinted with the dealer's name as well as bearing a personal signature."

So efficiently has the Frigidaire mailing department been set up for this work that 25,000 pieces are mailed in an average day, including both household and commercial mailings.

Both the household folder mailings and the campaign, which includes four page illustrated letters, have been well received by the field organization. Salesmen and dealers everywhere report that the direct mail service is more than paying for itself by reducing sales resistance and making prospects more respective.

NEW ADVERTISING DRIVE FOR ZEROZONE DEALERS

Chicago, Ill.—George Berg, advertising and sales promotion manager of the Zerozone Corporation, has prepared elaborate newspaper and direct mail advertising which Zerozone dealers are using to great advantage. An entirely new advertising program has been developed which will be made the basis for all dealer activity, as preliminary tests have proven this advertising quite resultful.

NEW ENGLAND G. E. MEN PLAN MEETING

Springfield, Mass.—General Electric refrigeration dealers in western Massachusetts and southern Vermont are scheduled to meet in Hotel Kimball, here, June 5. The meeting will be under the auspices of the Electric Device Co. of Springfield, with George H. French in charge.

WAYNE ADDS SALES OUTLETS IN SEATTLE

Seattle, Wash.—Three new agencies have been appointed for Wayne electric refrigerators by the Washington Home Equipment, Seattle distributors. These new agencies are the Broadway Heating & Plumbing Company, W. H. Deatherage, and H. W. Rudolph.

KEROTEST *forged brass* **MANIFOLDS**

A difficult problem for the service manager has been solved with this Kerotest seamless type of Manifold equipped with Angle Valves permanently screwed and soldered 2 inches between centers as illustrated.

These square end tubes can be obtained in 2, 3, 4, 5, 6, 10 and 30 valve lengths, tapped on the ends for ⅜-inch pipe. Valves fitted with Wing Nut Seal Caps, or Packless Valves if you prefer.

Detailed specifications and quotations sent upon request.

KEROTEST MANUFACTURING CO. · PITTSBURGH, PA.

WILLIAMS LINE SHIPPED IN WIRE BOUND CRATES

CUTTING shipping department assembling and packing costs more than half, saving $40,000 yearly to dealers and a saving of one dollar in the cost of each of the thousands of shipping boxes and crates used by his firm are reforms brought about at a single sweep by C. F. Kirwan, traffic manager for the Williams Oil-O-Matic Heating Corporation, Bloomington, Ill.

Mr. Kirwan found that heavier and better carpentered crates and boxes did not bring about the desired reduction in claims, but they did add to shipping weight, and this was reflected in transportation costs—a serious element for faraway dealers. And even in domestic shipping the damage rate could only be lowered to a point with which Mr. Kirwan was far from satisfied.

He tested a series of packing methods, ultimately selecting a type of container which is now "tailor-made" to fit each product. Designing this container involved a study of the merchandise units to be packed—their size, shape, weight and characteristics as to balance, or tendency to thrust through the sides and ends of boxes, or to strain the framework of containers in rough handling. To determine the correct box design for withstanding such strains, occasioned by falls when stacked, or from trucks, dropping on ends, corners or sides in unloading, and sliding down chutes, it was necessary to work out experimental crates packed with merchandise units, putting them through a series of artificially-created shipping hazards.

The final design resulted in a box or crate that is standard in type. Each crate has a fairly uniform standard of strength, requiring approximately the same average number of falls or strains to render it unserviceable. The strength is determinable and can be established at any point set by the needs of the article to be packed, providing a reasonable margin of safety, with the assurance that this margin will hold true. On the other hand, the crates of the old type varied widely in safety and because of this lack of average dependability it was necessary to build all of them excessively strong.

The type of container indicated by the tests as proving the most efficient and economical for both domestic and foreign shipping of Williams goods involves the use of much lighter materials, especially in the sides and ends, the real strength of the containers being furnished by wire strapping. The falls and jars demonstrated that heavy material such as formerly used contributed nothing to box strength that was not more than compensated by the binding wires, as in each strength test they performed the major function of holding box and contents together.

The consequent reductions in the shipping weight of containers alone saves $40,000 yearly to the firm's dealers in reduced transportation charges, says Mr. Kirwan. The compressor unit of the commercial refrigerating outfit which weighed 550 lbs., packed by the old method, weighs 485 lbs., in the new container, a reduction of 65 lbs. An oil burner model formerly shipped at 250 lbs., weighs 210 lbs., in the new box, the 40-pound reduction meaning a saving of $2.10 to Pacific Coast dealers.

Among other gratifying shipping department savings is a reduction in the number of operations in assembling and packing. From 8 to 10 refrigerating units are packed in the time formerly required for 3 to 5.

Mr. Kirwan is especially enthusiastic about his unbroken record of safely delivered shipments, especially to foreign points. Extra handling hazards incident to dealings in the 41 countries served by the Williams line include the rope sling, the swinging platform and the native porter and in this gauntlet the merchandise receives far rougher treatment than is encountered within the limits of the United States. Mr. Kirwan insists that all "grief" due to failures of shipping containers has been eliminated and offers as evidence the fact that claims have become nil during three years of domestic and two years of foreign shipping.

FOREIGN BOUND KELVINATORS

London, Ont., Canada.—On a recent day a long train of freight cars was loaded with Kelvinator products for transportation to the seaboard, destined to points overseas. In the shipment were four carloads for Kelvinator, Ltd., London, England; three carloads for Elektro Kuhlanlagen, A. G., Leipzig, Germany, and one for Ponce, Porto Rico.

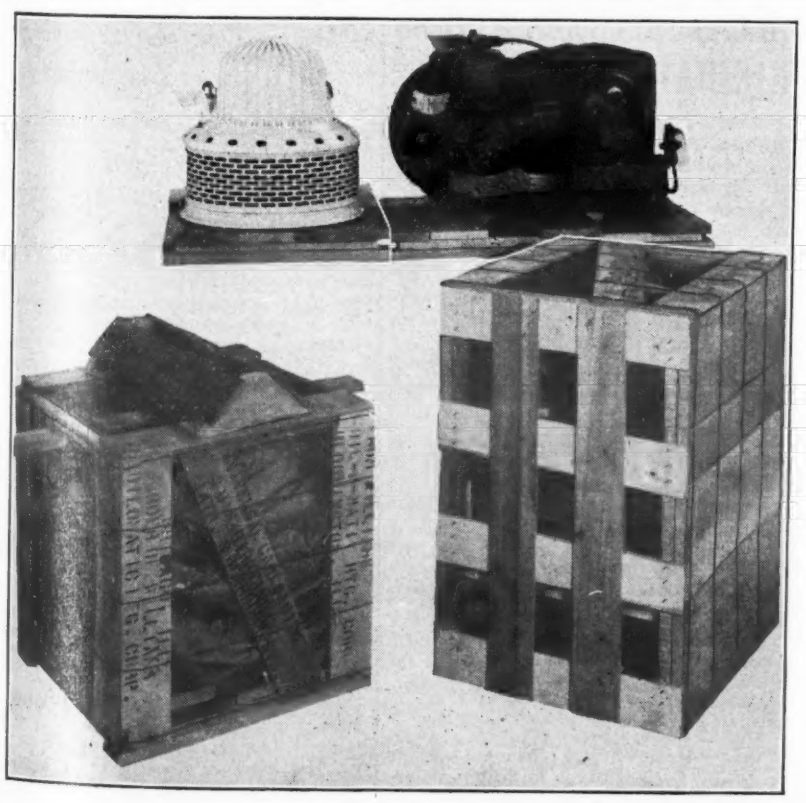
It happened that, on that day, the Export Division was showing representatives of the Japanese distributor through the factory. They were much interested in this big consignment to foreign points. The Japanese visitors were Admiral Ouchi, Imperial Japanese Navy, retired, director of the Mitsubishi concern in Japan; K. Hirayama, R. Masaki, and Y. Yanagisawa, who is to be manager of the Kelvinator division of Ryobi Denki Shokai, a subsidiary of the Mitsubishi establishment, new Kelvinator distributor for the Empire of Japan.

NORGE ADDS NEW OUTLET IN KANSAS CITY

Kansas City, Mo.—Seufert Bros., 1425 Grand Avenue, are now handling Norge refrigerators. The department is in charge of P. A. Blomquist, who has handled the refrigerators and stoves for Seuferts.'

ZEROZONE NAMES NEW DISTRIBUTOR

Pittsburgh, Pa.—The Zerozone Corporation of Chicago announces the appointment of the U. S. Radio Company, here, as distributor in this district.



Packing Refrigerator Parts

PADLOCKED REFRIGERATOR KEEPS COOL IN PUBLIC

Coshocton, Ohio.—A unique demonstration, unusual in its attention-compelling value, was arranged by Harry F. Strong, new business manager for the Ohio Power Company, in connection with the "Drowned in Water" campaign of the General Electric refrigerator.

A refrigerator was placed on a platform directly opposite the courthouse square. Then city firemen dashed to the scene, leaped from their truck and played a four-inch stream of water on the refrigerator. Following the forceful drenching, Mr. Strong explained to the assembled audience of more than 2,000 people that the General Electric refrigerator was filled with food. Then he introduced Mayor Johnson C. Smith, who proceeded to place about the refrigerator a heavy chain, which he padlocked. Signs told the crowd that the food placed in the refrigerator would be fresh and palatable when taken out a week later.

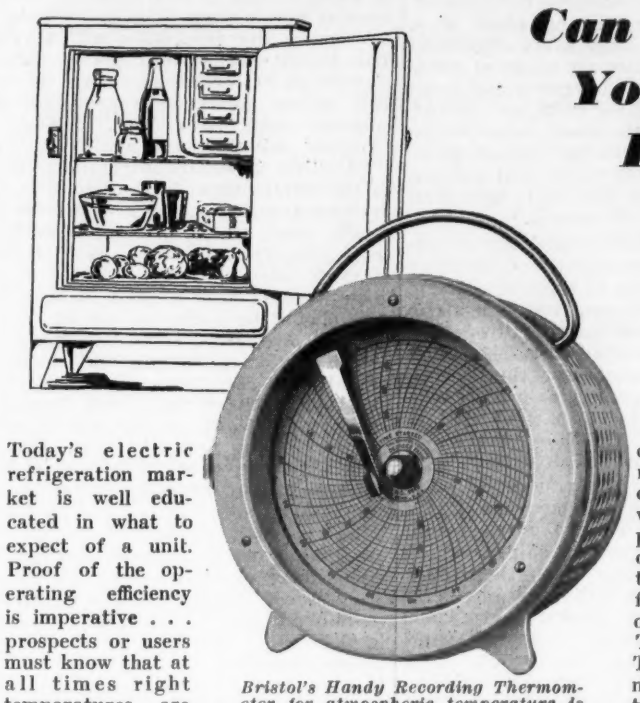
The stunt was staged on Saturday evening. For a whole week the refrigerator stood on the platform, unprotected. At night a 1,000-watt floodlight illuminated the scene. Thousands saw it during the week.

PRENTICE MAKES CHANGES IN SALES DEPARTMENTS

Seattle, Wash.—Changes have been made in the sales departments of Gordon Prentice, Inc., Fifth Ave., distributors of the General Electric refrigerators. James H. Spridgeon, well known in the automotive field, has been appointed sales manager of the commercial department, H. H. Princehouse, manager of the domestic department, and L. D. Littler, head of the apartment division.

How Cool Is That Cooling Chamber . . .

Can You Really Tell?



Today's electric refrigeration market is well educated in what to expect of a unit. Proof of the operating efficiency is imperative . . . prospects or users must know that at all times right temperatures are maintained.

How cold—can be answered emphatically by placing in the cooling chamber Bristol's Handy Recording Thermometer. This instrument, with the continuous 72-hour record, automatically records any variation in temperatures which occur, and writes the complete refrigeration story on the chart.

Bristol's Handy Recording Thermometer for atmospheric temperature is 6 inches in diameter, uses 4-inch diameter chart. Case is aluminum alloy, white enamel finish.

The Recording Thermometer furnished calibrated to use with chart having range of 30 to 70° F., has been found to be most suitable for refrigeration requirements. Instruments made up this way are carried in stock for prompt shipment.

For further detail, description and prices, write for Bulletin No. 377

THE BRISTOL COMPANY
WATERBURY, CONN.

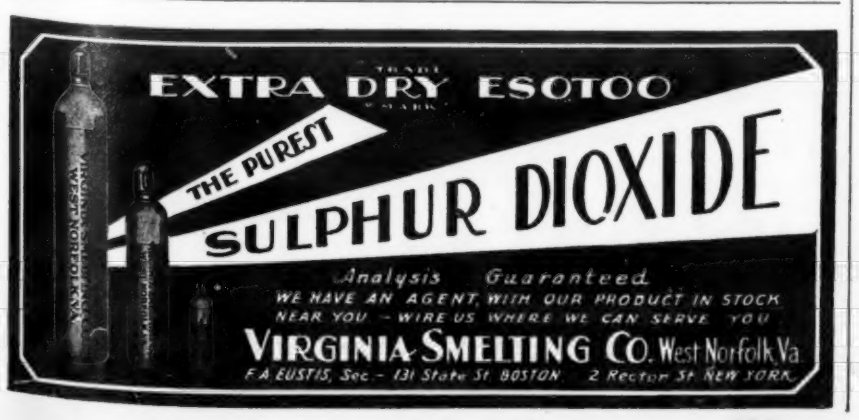
A Private Utility for the Public . . .

ILLINOIS CABINETS

Every practical refrigeration feature has been built into the structure of these new cabinets. The finest steel and porcelain for everlasting use; DRY-ZERO insulation in generous layers for perfect performance; pan-type doors with air tight gaskets for beauty and economy; over size capacity for more storage; new chromium hardware for appearance and permanence; lines and proportions for a pleasing effect of artistry and design.

Please write for details on complete line.

ILLINOIS REFRIGERATOR COMPANY
"Fine Cabinets for 40 Years"
MORRISON - ILLINOIS


EXTRA DRY ESOTOO
THE PUREST
SULPHUR DIOXIDE
Analysis Guaranteed
WE HAVE AN AGENT WITH OUR PRODUCT IN STOCK NEAR YOU - WIRE US WHERE WE CAN SERVE YOU
VIRGINIA SMELTING CO. West Norfolk Va
F.A. EUSTIS, Sec. - 131 State St. BOSTON 2 Rector St. NEW YORK

REFRIGERATION INDUSTRY DRAWS OTHER PRODUCTS

ALTHOUGH the electric refrigerator is becoming more and more of a year 'round item with every organization handling it, sales are made so much more easily during the spring and summer months that sales staffs are greatly increased. Even the most conservative organizations that are desirous of sticking to electric refrigeration and nothing else, find themselves with more men than they need in the off months.

This situation has opened up an opportunity that manufacturers of other products are turning to their advantage. Makers of oil burners, water heaters, and, of late, radio manufacturers are turning to the channels of refrigeration distribution as outlets for their units. By so doing they are paying a handsome compliment to the efficiency of the refrigeration industry, which could not attract such favorable attention if it were not doing its own job well.

The industries which have made this friendly invasion of the refrigeration industry manufacture machines, which by their very nature reach their peak sales in the off months for refrigeration, and they are offering to refrigerator dealers an extended field of sales effort that many are trying out. In a recent issue, Printers' Ink made the following comment on the refrigerator and radio situation:

"All this is interesting from the standpoint of current merchandising development and history. Back of it all can be seen the growing inclination of merchandisers of every degree to get as far away as possible from one line, or limited line, offerings. They see the need of having enough of a variety to keep their manufacturing and selling organizations consistently busy instead of being rushed to death during certain seasons and having little or nothing to do during the remainder of the year. The benefits of such a policy from a standpoint of lowering production costs and selling goods more profitably are obvious; they have been outlined in Printers' Ink time and again.

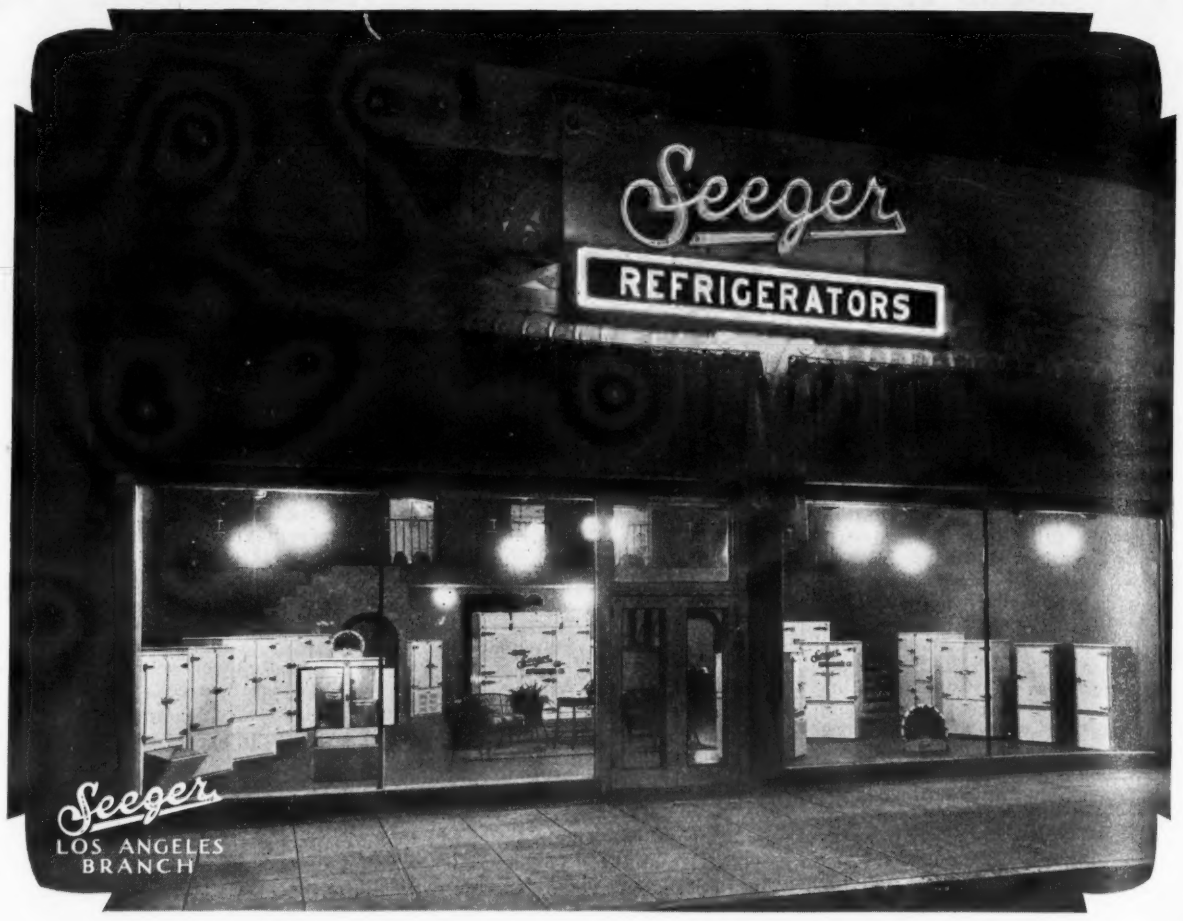
"Another decidedly intriguing feature of the development is that manufacturers and distributors, both wholesale and retail, seem to be getting away from their previous inhibitions about limited markets—also that the old idea to the general effect that a stock of merchandise should be made up out of strictly related lines seems to be disappearing."

The opinion of Printers' Ink, although valuable, is not necessarily decisive on questions such as these, and there still remain, especially in the refrigeration industry, many men who think that refrigerator men should stick to refrigerators and not diversify their thought and effort.

The growing number of dealers who are taking on oil burners, heaters and other lines of like nature during the slack season will furnish an opportunity to find out which school of thought is in the right. Refrigeration men have a golden opportunity to participate in one of the most interesting merchandising developments of recent years.

This much is certain. Refrigeration dealers who take on other items will handle them with the same intelligent skill that enables them to sell electric refrigerators.

Seeger Opens New Branch in Los Angeles



THE increase in the sale of cabinets by Seeger in California has necessitated the opening of a new branch at 655-657 South LaBrea Avenue, Los, Angeles, by the Seeger Refrigerator Co.

This beautiful display room has the modern Spanish style, so much in vogue on the Pacific Coast. A complete line of cabinets, both for residence and commercial uses, are on hand to accommodate dealers, and the sales force is under the direction of John D. Given.

WATER HEATERS SUITABLE FOR OFF SEASON SALES

ONE of the products that are being offered to the refrigeration dealer to stimulate business during the off season is the Sepco electric water heater, which is manufactured by the Automatic Electric Heater Company of Philadelphia and Pottstown, Pa., and Toronto, Canada. Electric heaters for both the commercial establishment and the home are included in the Sepco line. At present, this company is directing its endeavor toward an increasing number of residential installations by dealers. Sepco heaters have many features for insuring efficiency and economy of operation.

Sometime ago this company placed in the Electrical Building, Buffalo, what is probably the largest electric water heating installation in the world.

The mammoth Sepco is a 700-gal. unit, 162 KW, consisting of 81 "Split-circuit" heating units of 2 KW each. The load is divided into three circuits, controlled by Sepco thermostats and panel balanced on a 3-phase, 25-cycle service.

It supplies an abundance of hot water during the summer months for the entire requirements of the Electrical Building at Buffalo, N. Y.

W. F. Clark, vice-president of the Automatic Electric Heater Company, and inventor of Sepco, says: "Electric water heating is a fast-growing field. Power companies are coming to appreciate water heating as a load-builder, and one after another they are falling into line with rates which make it not only possible, but economical, for home owners to enjoy this modern hotel convenience.

"The idea of heating water by electricity is not new in its application. We have been building Sepcos since 1915—and, incidentally, a number of the heaters which were installed at that early date are still giving satisfactory service. One of the first successful models is now a permanent exhibit in the Ford Museum at Dearborn, Michigan.

"During the early years electrically-heated water was considered a crazy idea—an impractical dream. But we were convinced that the existing methods of obtaining hot water, with their accompanying odors, soot, labor and dirt, were a menace to health and an obstacle to cleanliness. Household tasks were being made easy by electricity—why shouldn't it be used to furnish clean, piping hot water?

"We had two educational jobs on our hands: first, we had to prove to the power companies the value of electric water heating as a load-builder; second, we had to convince the consumer of the health-promoting properties of electrically-heated water."

DALLAS SALESMEN ATTEND FRIGIDAIRE CONFERENCE

Dallas, Tex.—More than 125 salesmen of the Dallas district attended the second regional sales conference of the Frigidaire Corporation, held at the Adolphus hotel, Dallas, recently. George Jones, regional manager, and J. O. Dearing, from the Dayton, Ohio, headquarters, addressed the sales conference. Mr. Jones reported the national sales production of his company as being far in excess of the same period last year.

The volume of sales of the Dallas district for the first three months of 1930 was reported to be 33 per cent ahead of the same period of 1929, according to J. P. Galloway, of J. P. Galloway, Inc., distributors of Frigidaire in the Dallas district. Mr. Galloway also told the sales conference that Dallas district was second in the United States in the volume of sales of Frigidaire equipment.

The increase in the volume of business of the Dallas district has been made under the sales direction of J. P. Galloway, who came to Dallas in February from Dayton.

The local headquarters for J. P. Galloway, Inc., have just been moved to the Santa Fe Terminal building, where complete stocks of Frigidaire equipment are maintained, and where enlarged shipping facilities, sales rooms and service departments are provided.

STORZ COMPANY HAS NOT ADDED NEW LINES

THE NEWS has been advised by E. J. Nellor, vice-president of the Storz Electric Refrigeration Co. of Omaha, Nebr., that his company has not taken on a line of radios and washing machines as announced on page 8 of the May 21 issue. The Storz company is distributor for the General Electric refrigerator and does not contemplate on adding any other lines. The Omaha correspondent erred on this matter and the News wishes to correct any impressions made by this story.

WISCONSIN SALES AHEAD OF LAST YEAR'S RECORD

By L. M. Williams, Manager, Commercial Department Wisconsin Power & Light Co.

OUR refrigeration business this year has exceeded quite materially our business for last year for the same period. During the five months of last year we sold 306 domestic refrigerators and for the same period of this year we have sold 485 domestic refrigerators, an increase of 179. In view of the weather conditions which we have had and the general business conditions, we feel that this is very gratifying and we look forward to an unusually successful year on electric refrigeration.

We have set a quota for this year of 1,200 domestic refrigerators or almost double the number we sold last year. Our last year's sales were 666, our domestic sales in 1928 were 237, and our estimated sales for 1930 are 1,200. We estimate that the 666 refrigerators placed on our lines last year increased our average residential consumption four kilowatt hours per customer per year, and we estimate that 1,200 refrigerators will increase our average annual kilowatt hour residential consumption eight kilowatt hours per year. This means a great deal and for that reason we feel that electric refrigeration should receive a great deal of attention from every one in the utility organization.

The increased kilowatt hour consumption is secured without any additional capital investment on the part of the utility and helps to fill in the valleys due to its intermittent operation and the fact that it comes during an off-peak as well as on-peak period. We feel that electric refrigeration has just started and that there is a big future ahead, for the electric refrigerator fills a need in the home not to be obtained as satisfactorily in any other way.

I might also add that we are just completing a 30-day activity during which we will sell approximately 350 refrigerators and we plan another 30-day activity later in the year in which we expect to sell the same number.

We find that 1,200 refrigerators from a gross merchandising revenue angle means about $350,000 per year in which, of course, every commercial manager is very much interested and added to that the kilowatt hour increase secured makes three very strong reasons why our company is particularly interested in pushing the sale of electric refrigeration.

L. J. MARTIN NOW WITH NORTHEY COMPANY

Waterloo, Iowa.—Lawrence J. Martin has been appointed superintendent of the Northey Manufacturing Co., here. Mr. Lawrence was formerly superintendent of the Leonard Refrigeration Co. of Grand Rapids, Mich.

SCHAEFER CO. LANDS LARGE ORDER

Milwaukee, Wis.—In the new Palace Apartment buildings which have just been completed on Atkinson avenue, between 14th and 15th, the E. H. Schaefer Company has installed 18 General electric refrigerators.

Fulco
REFRIGERATOR COVERS

"FULCO" covers are used by those dealers who realize the importance of making deliveries in perfect condition—without scratches or broken enamel. For they know that complaints mean dissatisfied customers and loss of business.

"FULCO" covers are a real service feature that helps sales and holds trade.

Substantially constructed, heavily padded, box-shaped, providing perfect protection.

Give us the dimensions of your refrigerators, and let us quote special prices on your individual needs. Write our nearest house.

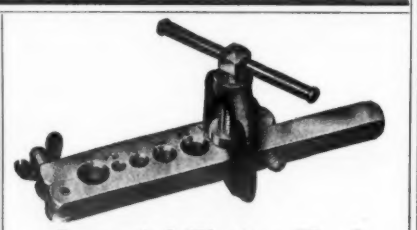
ON AND OFF IN A JIFFY

Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA · NEW ORLEANS · DALLAS · ST. LOUIS
MINNEAPOLIS · BROOKLYN · KAN. CITY, KAN.

Imperial
Aids To Better Installations

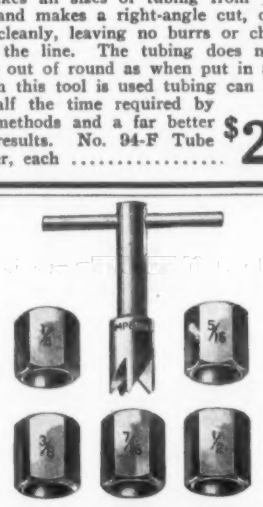
Imperial Tube Cutter

Here is a highly efficient tool for cutting copper, brass, block tin and lead tubing. It takes all sizes of tubing from ⅛" to ⅝" and makes a right-angle cut, quickly and cleanly, leaving no burrs or chips to clog the line. The tubing does not become out of round as when put in a vise. When this tool is used tubing can be cut in half the time required by old methods and a far better job results. No. 94-F Tube Cutter, each $2.50



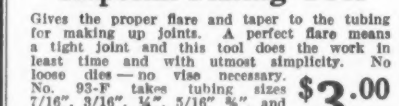
Imperial Flaring Tool

Gives the proper flare and taper to the tubing for making up joints. A perfect flare means a tight joint and this tool does the work in least time and with utmost simplicity. No loose dies — no vise necessary.
No. 93-F takes tubing sizes 7/16", 3/16", ¼", 5/16" ⅜", and ½", each $3.00
No. 95-F takes tubing sizes ¼", 5/16", ⅜", ½" and ⅝", each $4.00



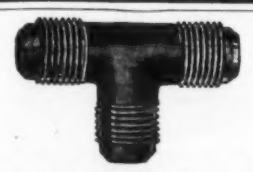
Imperial Refacing Tool

This new tool insures against leaks caused by S. A. E. couplings that do not seat properly. In use, the coupling is inserted into the correct adapter, then a few turns of the five-fluted hardened steel refacer produces a faultless seat of correct size and taper for a tight and leak-proof joint.
No. 100-F Refacing Tool with adapters for sizes ¼", 5/16", ⅜", 7/16" and ½". Per Set $3.75



Imperial Tube Bender

Just slip this tool over the tubing where the bend is to be made. Then bend both tube and coil by hand to whatever form desired. Seven Tube Benders comprise a complete set.
No. 101F Tube Bender Set for tubing sizes ¼", 5/16", ⅜", 7/16", ½" and ⅝". Per Set $2.75



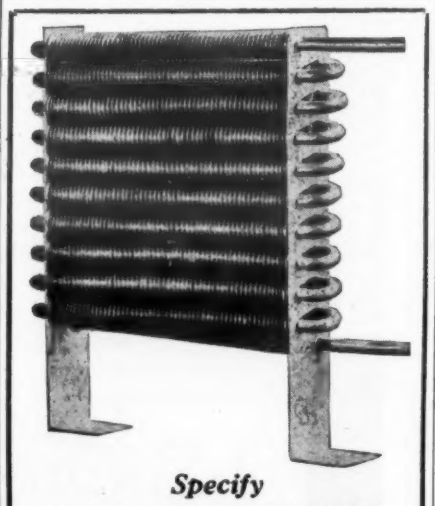
Imperial Brass Forgings

Accurately made to meet all the requirements of Iceless Refrigerator Manufacturers. Will not leak. Let us quote on your requirements.

Send for New Catalog

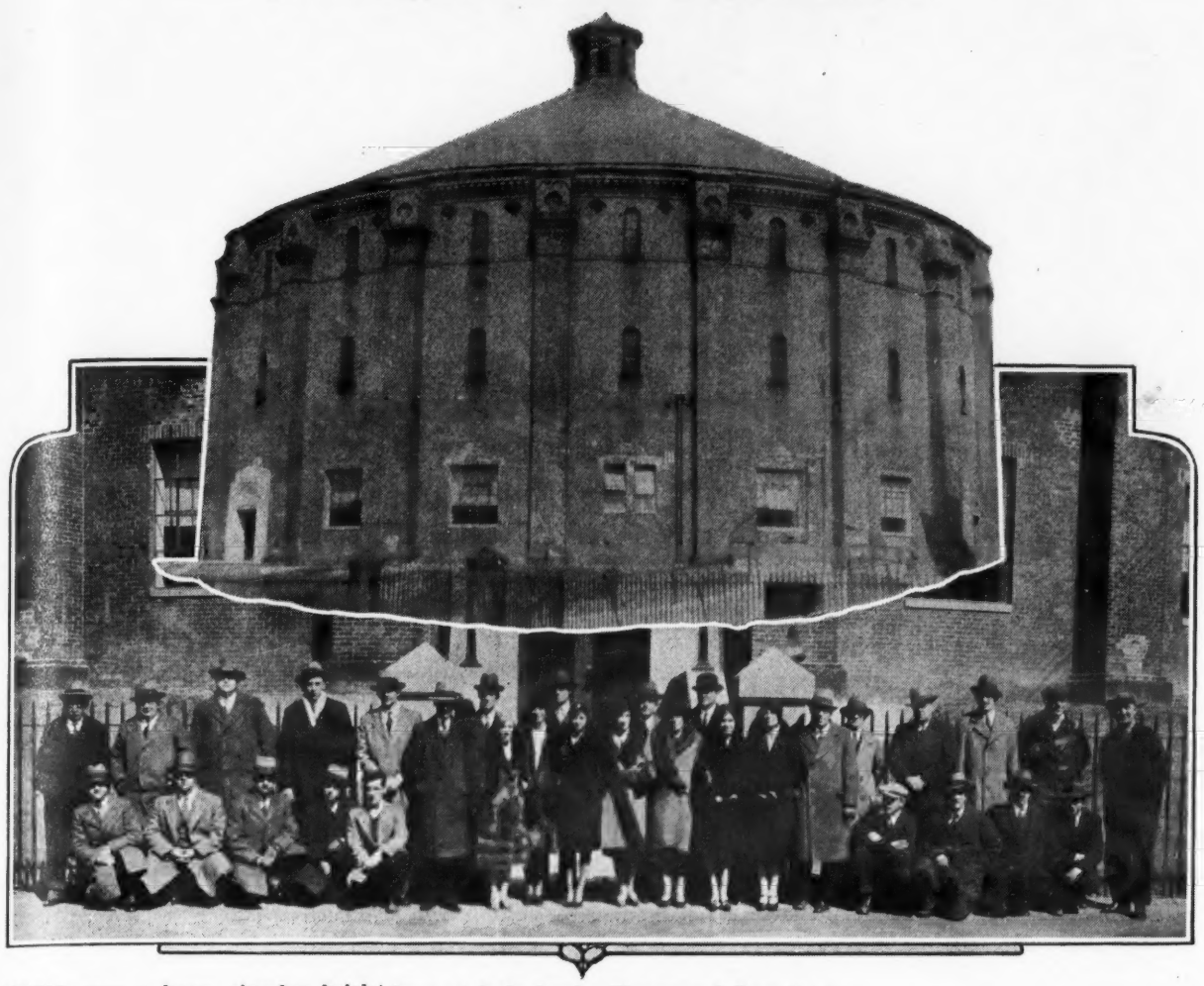
The Imperial Catalog, just off the press, illustrates and describes the complete Imperial line of Brass Forgings, Valves, Manifolds, Tools, etc. To become acquainted with the newest and most modern, send for this catalog today. It's free.

THE IMPERIAL BRASS MANUFACTURING CO.
565 SOUTH RACINE AVE. - - - CHICAGO, ILL.



Specify
ROME CONDENSERS
Made of heavy gauge deoxidized seamless copper tube. One piece construction.
Designs for all requirements.
Rome-Turney Radiator Co.
ROME, N. Y.

Former Gas Tank Blossoms Forth as Copeland Headquarters in New Haven



TAKING over a huge, circular brick structure formerly used as an illuminating gas storage tank which has stood idle for ten years, the New Haven Electric Company, Copeland electric refrigeration jobbers for several counties in Western Connecticut, is now the possessor of a combination office building and warehouse with adequate receiving and shipping facilities, central location and storage capacity of 225 carloads.

In October, 1929, the company, then located at 296 Elm street, felt the need of larger quarters and H. A. Lines, president, cast about for a new location. Mr. Lines looked over the old gas tank building, which, with 24 feet of water in the basement, had been shunned by New Haven realtors and prospective tenants for a decade. It was a "white elephant" in the eyes of everyone who had eyed it prior to the advent of Mr. Lines. That 24 feet of water looked too ominous. Further, the structure was a perfect circle and its interior, having no floors, was scarcely suggestive of use. A natatorium or perhaps an aquarium for live fish seemed more to the point than anything else.

Mr. Lines considered the proposition carefully and finally, late last October, signed the papers. Then began the work which has transformed the huge building into one of the largest and most efficiently-laid-out wholesale distribution plants in southern New England. There was a roof, part of the original structure, which was built 40 years ago by the New Haven Gas Light Company. There was a basement, with its damp atmosphere, and of course there were walls, brick and averaging three feet in thickness—and that was all.

The first thing that had to be done was to get rid of the water, which originally had served as a "seal" for the rising and falling gas tank within the brick walls. Part of the water pit was filled in to make a basement, after pumps had labored unceasingly for some hours. An entrance was cut through the basement wall and a ramp constructed from the street. A street floor was built with another above it. There is still space above the second floor for two additional stories when needed.

Office rooms on the front part of the ground floor circle are shaped like pieces of pie, with the points cut off slightly. There is no waste space whatever in this arrangement. Exhibition rooms for the wholesale trade are part of the office circle, with testing and repair rooms. The rest of the ground floor is given over to storage and shipping. Trucks back directly into the building on this floor for loading, the runway being sunk so that trucks stop at the shipping platform at body level. The second floor is devoted entirely to storage.

The building is 114 feet in diameter. This is almost comparable with the famous dome of the Pantheon in Rome, which is 140 feet across. The property on which the building stands has frontage of 258 feet on St. John street and depth of 150 feet. The interior constuction is "heavy mill," the floors being 4 inches thick in the rough and 5 inches including the hardwood surface.

Purchase of the building has effected a saving of 50 per cent in rental charges alone, according to Mr. Lines. The structure and property are owned outright by the company. A full automatic sprinkler system is now being installed.

The New Haven Electric Company is now supplying 60 Copeland dealers in its Connecticut territory. As new dealers are being added constantly, the improved shipping facilities provided by the new building are proving invaluable. Atwater-Kent radios are handled in addition to the Copeland refrigeration line. The concern is strictly wholesale.

The building presents an attractive appearance, due in part to its original construction and in part to the alterations which have been made under Mr. Lines' direction. Twenty pilasters and an ornamental cornice, part of the original, dignify the exterior. Windows were cut through the thick wall by the present occupants so that plenty of light and air is admitted. Over 30 are employed in the building.

MAYALL ICE MACHINE CO. ORGANIZED

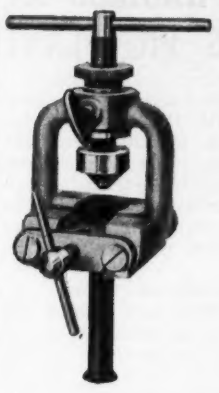
Spokane, Wash.—Stanley Mayall, until two years ago general manager of the Armstrong Machinery Company, has entered into business partnership with John E. Farris, for over twenty years a refrigerating engineer in Spokane.

The new company will function under the name of the Mayall Ice Machine Company, operating at the Brown Bros. machine shops and boiler works, E. 316 Riverside Avenue, Spokane.

NELSON, CHIEF ENGINEER, LEAVES RICE PRODUCTS

Detroit, Mich.—Royal G. Nelson, chief engineer of Rice Products, Inc., Detroit, resigned from that position on May 1.

Mr. Nelson was formerly chief engineer of Norge Corp., Detroit. He is now engaged in special work in connection with electric refrigerating mechanisms, as well as the development of a new type of shaft seal, and is occupying offices with F. B. Riley and Associates, 320 Beaubien St., here.



PRECISION

TUBE CUTTERS—FLARING TOOLS

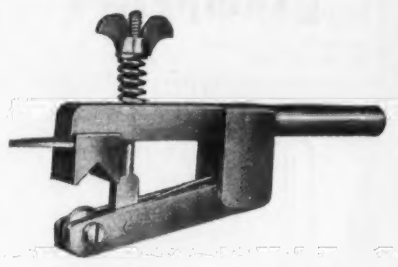
RESEATING TOOLS

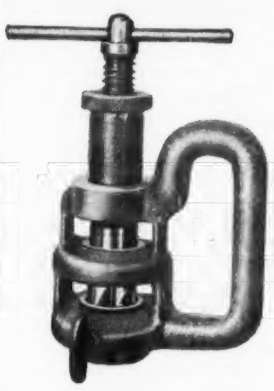
NEW—BETTER—FASTER

A flaring tool that spins out the tube to a soft flare and then burnishes it to a polished surface and a perfect fit with male seat. This is accomplished by three hardened rollers. Four hardened jaws in two pieces are a part of each tool.

AUTOMATIC FEED TUBE CUTTER FOR COPPER TUBING

This Copper Tube Cutter, with automatic pressure feed spring, is in a class by itself. Tubing is cut quickly and cleanly, without flattening or threading tube.





Leaky flared tube joints are frequently the result of marred male ends of fittings or non-concentric threads and seats. A great deal of time and money can be saved by using a properly designed reseating tool for defective valve or fitting ends. A hardened 7-tooth cutter will quickly reseat or reface a fitting. Any size from ¼" to ⅝".

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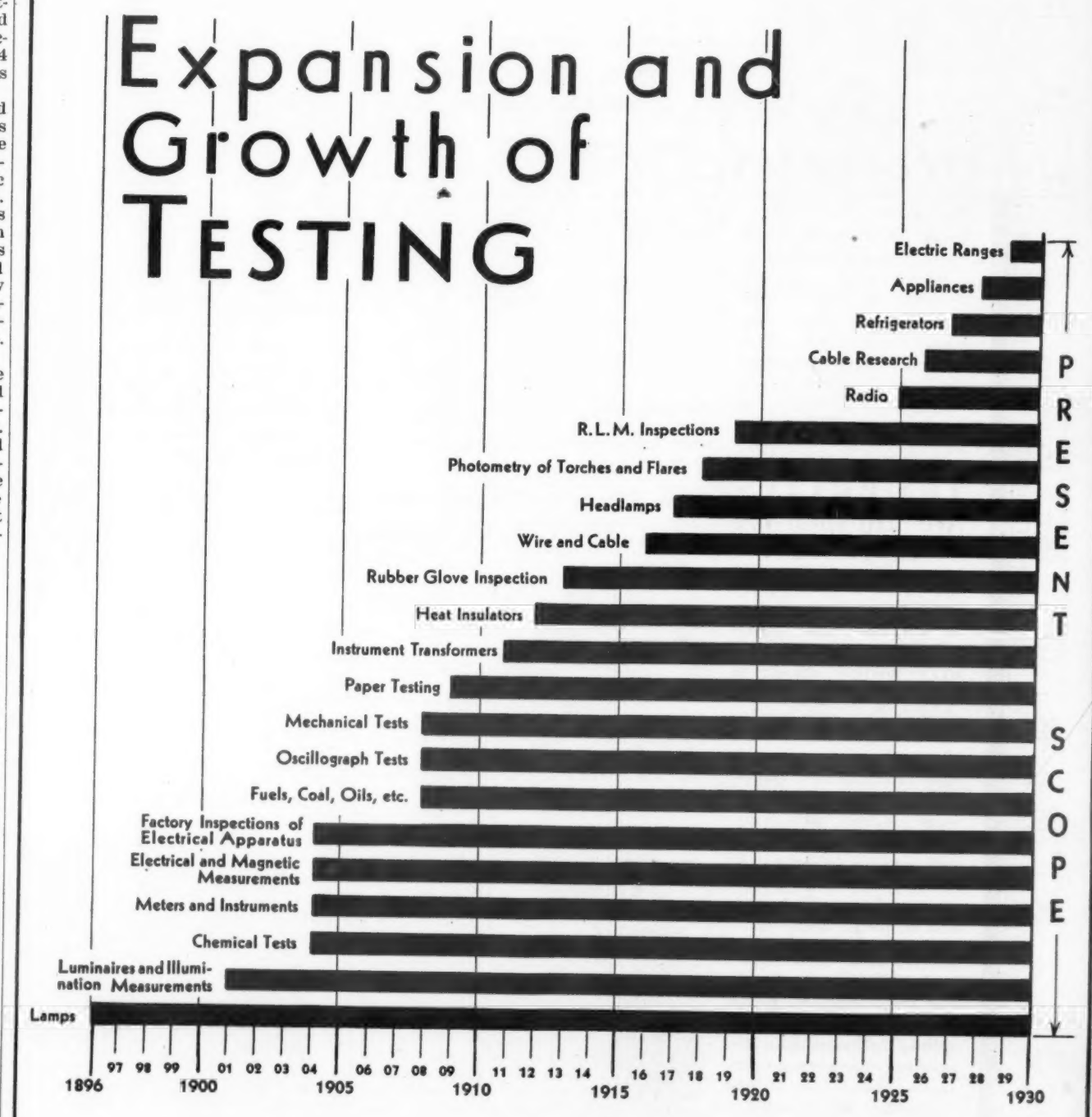

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Distributors Reap Rich Harvest With Temprites

TEMPRITE water and beverage coolers have been in actual production less than three months. Yet, in this short time they have opened an entirely new field to refrigeration distributors and dealers.

Actual sales records for over 100 cities show that the market is fertile beyond expectation. Refrigeration distributors handling TEMPRITE, pronounce it the most up-and-coming and profitable division of their business. TEMPRITE fills out their other lines and also enables them to handle special cooling applications for fur storage, florists' boxes, meat and fish counters, where brine circulation is used, in addition to regular water cooling in restaurants, cafes, lunch rooms, hotels, soda fountains, offices and industrial buildings.

50° always

Every TEMPRITE cooler, whatever the application, delivers drinking water or beverage at proper, controlled temperature, constantly and efficiently. Each cooler is factory-set to deliver liquid at the desired exit temperature, which may be any point between 38° and 50°.

TEMPRITES Are Inexpensive to Install

Other profit factors enjoyed by TEMPRITE distributors are low initial and installation costs. A recent TEMPRITE multiple installation required more than 800 feet of refrigerant lines between drinking stations—not a foot of insulation was used. TEMPRITES cool instantaneously at the point of usage—without waste or loss of time. With TEMPRITE'S wide range of capacities—10 to 160 gallons an hour—it is easy to select the proper size unit for the particular job.

Refrigeration distributors and dealers are invited to ask for literature, prices and discounts. Attractive selling rights are open in a number of preferred territories. Yours may still be available. Write today.

LIQUID COOLER Corporation

Detroit • • Michigan

SAFETY EMPHASIZED AT KELVINATOR'S BIG PLANT

Detroit, Mich.—"Not one compensable accident since April 10, a wonderful record," stated H. G. Perkins, assistant to the president, Kelvinator Corporation, to foremen and superintendents assembled for a safety dinner and discussion in the company's dining room at the Plymouth Road plant, Monday evening, May 26.

Mr. Perkins introduced George W. Mason, president, who told the group that safety has first the humane, social side, then the good business side. "Every department has hazards," Mr. Mason said, "and an adequate degree of safety is best secured by proper instruction. Safety means efficiency. The Kelvinator Corporation stands squarely behind this safety program, and expects every man present to think, preach and practice safety."

"Ye are your brothers' keepers," Frank Morrison, chairman of the board of the Detroit Safety Council, told the group, and explained that a comprehensive survey of all accidents in Detroit plants has shown that 90% of all accidents are caused by new men who need training in the operation of their machines. "It is not the dollars and cents, but what it means to the family of the injured workman," said Mr. Morrison in citing cases resulting in serious accidents due to carelessness and lack of instruction. He complimented the group which recently won a city-wide safety contest, and told them to go after the record of another Detroit plant, which had not one accident, requiring time off, in a year and a half.

The relationship existing between the workman, the employer, and insurance companies, was clearly explained by H. V. Upington, as well as the operation of compensation laws now effective in all but five states. J. R. Sutton, insurance counselor, spoke of fire hazards and their relation to safety activities.

"You have a big factor of safety in buildings, equipment, and product, let's keep up our good record," said Mr. Perkins in introducing J. C. Roberts, new safety engineer for Kelvinator, who asked the men to consider whether the record of the past sixty days could not be continued indefinitely.

CYCLE CHANGE IN GRAND RAPIDS

Grand Rapids, Mich.—The change from the present 30 cycle to 60 cycle current in Grand Rapids by the Consumers' Power Co. is naturally causing much comment and question among the trade. Mr. Cleveland, local manager for the utility, states the company has no statement ready as to how expense of new installations and transfers will be met. The company is now in the midst of a city-wide survey to ascertain exactly what problems will be encountered. This survey to conclude in about thirty days. Work has been going on about one year at the power plants, and in changing wires and building new substations, so the switch-over will not be interrupted when the time comes to do so.

NEW SERVICE STATION FOR KELVINATOR

Shreveport, La.—The finishing touches are now being given the new service shop which the Southwestern Gas & Electric Company, Kelvinator distributors, is establishing in Shreveport, according to H. P. McKean, manager of the Kelvinator merchandising department.

The Kelvinator service station is expected to be one of the largest and best equipped establishments of its kind in the southwest. Ample shop space is provided and a complete line of parts is being installed for the benefit of patrons. A specialty will be made of rapid service.

FRANK TAKES POST WITH ARDMORE UTILITY

Ardmore, Pa.—V. L. Frank has joined the Counties Gas & Electric Co. as sales engineer in charge of the refrigeration department. For the past three years Mr. Frank was engineer in charge of field sales promotion and advertising for the James Spear Stove & Heating Co. of Philadelphia, Pa. He organized the refrigeration division of this company and developed the "one pipe circulating system" for ice water circulating lines, the Spear ice water generator, milk and water coolers, ice makers, and Frigistat controls.

COMMONWEALTH BRASS OPENS CHICAGO OFFICE

Chicago, Ill.—Commonwealth Brass Corporation, Detroit, announces the opening of a district sales office at 205 W. Wacker Drive (Engineer's Building), here, in charge of C. A. Bierma.

Commonwealth Brass Corporation manufactures a complete line of brass tube and pipe fittings for the automotive, auto-marine, and automatic refrigeration industries.

Frigidaire's New Home in St. Louis

THREE hundred Frigidaire dealers and salesmen from the St. Louis territory were present recently to assist in the ceremony of formally opening the new building of the Del-Home Light Company, distributor for St. Louis district. W. O. Waldsmith, president, was host, and several hundred people from the city were shown through the new showroom during the first day.

The building, located at Lindell Boulevard and Olive Street, is a two-story brick structure particularly designed for the company's offices and showrooms. It is on a lot having a frontage of 160 feet, and has its own parking lot. The front of the building is for display rooms and office space, while a special auditorium is provided for meetings and a large hall is to be used for display of refrigerated cases of all kinds for which Frigidaire supplies the cooling units.

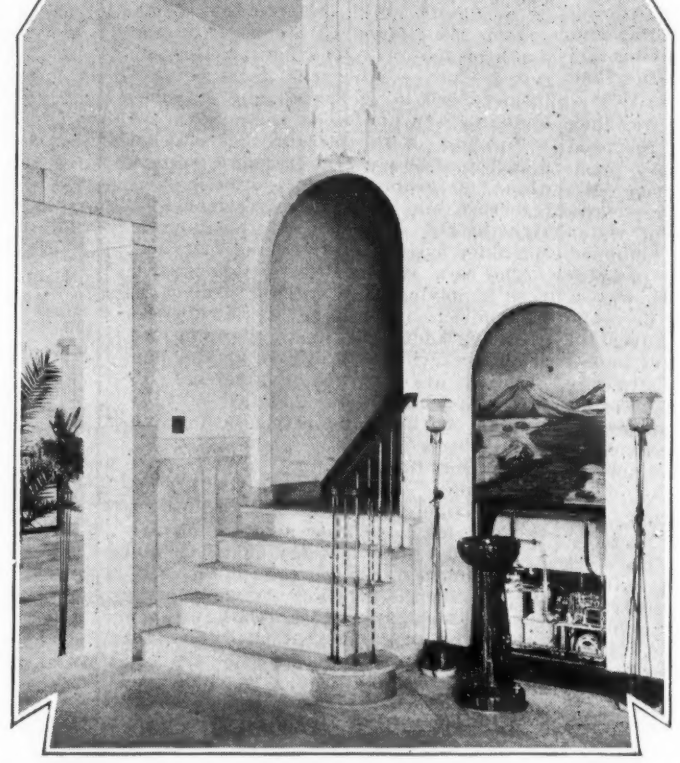
Rapid expansion of Frigidaire business in the St. Louis district has made the new quarters necessary, according to Mr. Waldsmith. Two years ago expansion forced the salesmen into a separate building, and plans for the new building were started when a third building was required to house the entire organization.

The new showroom, one of the finest in the country, is finished in green, with a touch of modernism given by use of specially designed light fixtures.

One of the most interesting features of the building is the large space designed for commercial exhibit purposes. Here every product designed for commercial use is on display, including a complete line of water coolers, milk coolers, room coolers, bottle coolers, display cases, walk-in boxes, ice makers, and similar applications of Frigidaire. The display is for use of the entire St. Louis territory, for demonstrating the commercial line to customers.

Office space, sales room, salesmen's headquarters, service department, commercial display room and auditorium in the building. The parking lot, designed to offer a place for customers to leave their machines, is a particularly fine feature, inasmuch as the new building is located along one of St. Louis' most traveled thoroughfares, where parking is forbidden.

Two weeks were given over to open house, during which time a number of clubs and women's organizations had luncheon at the new building, with President Waldsmith as host.



(Above)—Modernism prevails in the large showroom in St. Louis. The white refrigerators fit in well with the green background.

(Right) — Attractive archway adds to the beauty of the new quarters. (Below) — Spacious parking lot next to the building.

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***The* WATERS FILTER AND COOLER COMPANY**
148 CHAMBERS ST., NEW YORK, N. Y.

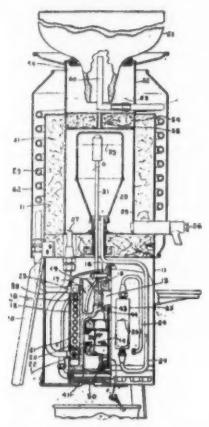
PATENTS

ISSUED MAY 6

1,757,578. REFRIGERATION. Alvar Lenning, New York, and Donald Branch Knight, Brooklyn, N. Y., assignors to Electrolux Servel Corporation, New York, N. Y., a Corporation of Delaware. Filed June 3, 1929. Serial No. 367,843. 11 Claims. (Cl. 62—119.5.)

1. That improvement in the art of refrigerating through the agency of an absorption system which comprises simultaneously expelling a plurality of refrigerants from different absorption liquids, simultaneously condensing the refrigerants, evaporating the refrigerants in the presence of each other and in the presence of an inert gas, conducting the gaseous mixture thus formed into the presence of the different absorption liquids to dissolve the refrigerants into the respective absorption liquids and again expelling the refrigerants from the absorption liquids.

1,757,638. LIQUID COOLER. Andrew A. Kucher, Chester, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 11, 1925. Serial No. 22,417. 16 Claims. (Cl. 62—115.)



1. In a liquid cooler, the combination of a compression refrigerating apparatus including a compressor, a condenser and an evaporator, a container arranged in heat exchanging relation with the evaporator for effecting cooling of a body of liquid, means for withdrawing cooled liquid from the container, and means operating concurrently with the cooling process for utilizing liquid cooled in the container as a cooling medium in the condenser.

1,757,764. DISPLAY APPARATUS. Eastman A. Burrows, Chicago, Ill., assignor to Thomas D. Huff, Chicago, Ill. Filed Oct. 13, 1926. Serial No. 141,407. 8 Claims. (Cl. 62—89.5.)

1. A display apparatus comprising a containing case and a plurality of cooling supports therein each comprising an ice mat structure and circulatory pipes.

ISSUED MAY 13

17,660 — REFRIGERATOR CAR. Otto Luhr, Chicago, Ill. Filed Dec. 11, 1929. Serial No. 413,206. Original No. 1,642,882, dated Sept. 20, 1927, Serial No. 107,944, filed May 10, 1926. 5 Claims. (Cl. 62—117.)

2. In a refrigerator car having a bulkhead at one end thereof, the combination with a brine tank located between the bulkhead and car end; of a refrigerating coil partly submerged within said brine tank and partly exposed outside of said brine tank; a compressor rigidly secured to the car body on the outer side thereof; means adapted to be driven from the truck while the car is in motion for operating the compressor; a condenser coil disposed on the outside of the car; a liquid receiving tank disposed on the interior of the car; and pipe connections from the compressor to the condenser coil, from the condenser coil to the tank, from the tank to the refrigerating coil, and from the refrigerating coil to the compressor, whereby the exposed portions of the refrigerating coil are effective to refrigerate the air in the car while the latter is in motion, and to simultaneously refrigerate the brine and render the latter available for refrigerating the air when the car is stationary.

1,758,008—REFRIGERATING UNIT. Hugo Mock, New York, N. Y. Filed Oct. 12, 1926. Serial No. 141,209. 4 Claims. (Cl. 62—1.)

1,758,073—REFRIGERATING AND ICE-MAKING CABINET. Ransom W. Davenport, Detroit, Mich., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 1, 1925. Serial No. 47,457. 9 Claims. (Cl. 62—116.)

6. A cabinet having a heat insulated compartment for perishable articles and a recess formed in the bottom of said compartment, a refrigerating element in said compartment extending into said recess, and closure means for said recess giving access to the same directly from said compartment.

1,758,074—HEAT-TRANSFORMING APPARATUS. Ransom W. Davenport, Detroit, Mich., assignor to Chicago Pneumatic Tool Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 10, 1927. Serial No. 174,267. 13 Claims. (Cl. 62—115.)

1. In a closed cycle refrigerating system in which the working substance has dissolved therein lubricant from the lubricating system, the process of continuously separating out said lubricant at the high temperature of compression, extracting heat from the separated lubricant while out of contact with the hot vapor phase of the refrigerating system, and returning the separated and cooled lubricant to the lubricating system.

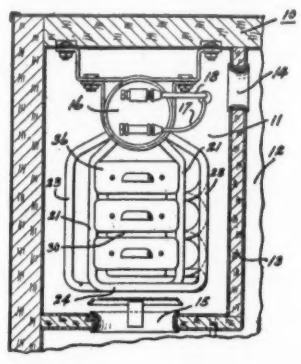
1,758,099—REFRIGERATING APPARATUS. Anton Edwin Anderson, London, England, Guido Maiuri, Turin, Italy, and Raoul Felice Bossini, Hayes, England. Filed Jan. 23, 1926, Serial No. 83,292, and in Great Britain Nov. 21, 1925. 2 Claims. (Cl. 62—119.5.)

1. Absorption refrigerating apparatus of the constant pressure type in which an inert gas is circulated between the evaporator and absorber, comprising a generator, a condenser, an evaporator and an absorber connected to form a closed system, and a conduit connecting the absorber and the evaporator for the passage of inert gas from the absorber to the evaporator, said conduit comprising an upwardly extending portion passing through the generator and a downwardly extending portion passing through the condenser, whereby inert gas passing through said conduit will be heated in the upwardly extending portion and cooled in the downwardly extending portion.

1,758,215 — CONTINUOUS ABSORPTION REFRIGERATING APPARATUS. Raoul Felice Bossini and Guido Maiuri, London, England. Filed Mar. 28, 1929, Serial No. 350,806, and in Great Britain Apr. 11, 1928. 3 Claims. (Cl. 62—179.)

1. In a continuous absorption refrigerating apparatus, an absorption liquid, a refrigerating agent absorbed by said absorption liquid, and a gas inert to said absorption liquid, and said refrigerating agent and of the same specific gravity as said refrigerating agent into and from which said refrigerating agent evaporates and is absorbed.

1,758,227—REFRIGERATING APPARATUS. Lloyd M. Keighley, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Oct. 31, 1927, Serial No. 229,959. Renewed Nov. 25, 1929. 11 Claims. (Cl. 62—95.)



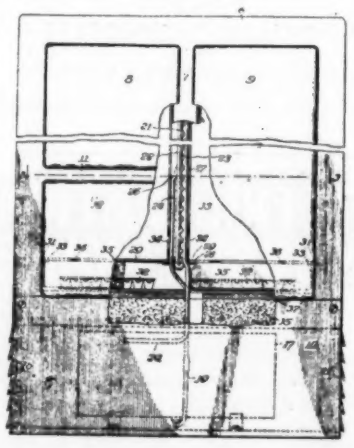
1. A refrigerating element for refrigerating apparatus including a refrigerant supply device and a plurality of conduits connected in parallel circuit relation thereto for circulating refrigerant, each of the conduits having a portion co-operating with the corresponding portions of the other conduits to define a freezing space and a portion extending remote from the freezing space for cooling circulating air, certain of the conduits having portions extending into the freezing space.

1,758,228—REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware. Filed July 31, 1928. Serial No. 296,474. 14 Claims. (Cl. 62—95.)

2. In a refrigerating apparatus, a cooling unit including a support adapted to receive an ice tray, a refrigerant duct including vertical and horizontal leg portions in intimate thermal contact with said support, said duct having a reverse bent portion at the connection of said leg portions.

10. A refrigerating element for refrigerating apparatus comprising in combination a header forming a reservoir for liquid refrigerant and a plurality of conduits connected to the header in parallel circuit relation, said conduits being arranged to form substantially two vertical spaced apart rows to define a freezing space, some of the conduits having portions extending horizontally within the freezing space so defined.

1,758,243—REFRIGERATING APPARATUS. William Wishart, Beloit, Wis., assignor to National Refrigeration Corporation, Beloit, Wis., a Corporation of Delaware. Filed Mar. 14, 1927. Serial No. 175,038. 6 Claims. (Cl. 62—116.)



1. The combination with a refrigerating cabinet comprising a cooling chamber the front wall of which is formed by swinging doors and a permanent mullion, an apparatus chamber beneath the cooling chamber, a partition permanently separating said chambers, said partition being provided with a forwardly opening slot at one side of said mullion, a refrigerating apparatus disposed in the apparatus chamber, an evaporator disposed in said cooling chamber behind and in alignment with said mullion, and pipes extending through said slot and permanently connecting said apparatus and evaporator, said slot being of sufficient width to permit bodily lateral movement of the condenser, compressor, evaporator and pipes so as to dispose the evaporator at one side of the mullion thereby permitting the apparatus as a unit to be bodily withdrawn from the cabinet in a forward direction.

1,758,258—REFRIGERATING APPARATUS. Lloyd M. Keighley, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed July 30, 1927. Serial No. 209,553. 18 Claims. (Cl. 62—95.)

5. In a refrigerating apparatus, a refrigerating element comprising a plurality of duct loops, one group of said loops being in longitudinal alignment to form a compartment and another group of said loops being in longitudinal alignment off set from the first group to form a second compartment, and portions of the loops in one group being in alignment longitudinally of the compartments with portions of the loops of the other groups.

1,758,259—REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Sept. 28, 1927. Serial No. 222,674. 12 Claims. (Cl. 62—95.)

1. A refrigerating element for refrigerating apparatus comprising in combination, opposed, vertically extending conduit means for circulating refrigerant arranged to define a freezing space, a support for an ice-making container within the space and remote from said conduit means, and heat conducting fin means connecting the support and the conduit means.

1,758,477—REFRIGERATING TRUCK. Albert C. Smith, Winthrop, Mass., assignor to William F. Baird, Boston, Mass. Filed Dec. 20, 1927. Serial No. 241,443. 14 Claims. (Cl. 62—117.)

1. In a motor truck having a power plant adapted to drive the same, the combination of a refrigerating system mounted in the truck and including a compressor, an electric generator driven from said power plant, an electric motor, driving connections between said motor and said compressor, and circuit connections for supplying said motor with current from said generator.

1,758,501 — ART OF REFRIGERATION. Barton H. Coffey, Elizabeth, N. J. Original application filed Aug. 9, 1920, Serial No. 402,403. Divided and this application filed Nov. 17, 1925. Serial No. 69,623. 9 Claims. (Cl. 62—11.5.)

1. In a device of the character described, a continuous conduit of uniform constant cross-sectional area, fluid circulating means in said conduit, a cooler operatively positioned with respect to said conduit, a refrigerant in said conduit, and a condenser for cooling said refrigerant, and means for producing variations of pressure and temperature in the refrigerant by centrifugal force.

1,758,529—REFRIGERATOR VEHICLE. Louis B. Olin, Chicago, Ill. Filed Jan. 30, 1929. Serial No. 336,126. 3 Claims. (Cl. 62—101.)

1. In a motor vehicle for transporting ice cream or other commodities, the combination of outer walls, a central vertical dividing wall, four freezing compartments, two on each side of said central vertical dividing wall, one above the other, a continuous pipe adapted to contain a refrigerating gas extending from the exterior of one of said walls through each of said freezing chambers at the tops thereof, said continuous pipe extending from the exterior of the truck at the front wall passing to a lower horizontal tier in the first compartment, thence to an upper horizontal tier in said first compartment, thence to an upper horizontal tier in a second compartment, thence to a lower horizontal tier in said second compartment, thence to a lower horizontal tier in the third compartment, thence to the upper horizontal tier in said third compartment, thence to an upper horizontal tier in the fourth compartment, thence to the lower horizontal tier in said fourth compartment, thence to the exterior of said wall adjacent the inlet portion of said continuous pipe.

1,758,567—METHOD AND APPARATUS FOR MAKING FROZEN CONFECTIONS. Frank C. Fernandez, Tucson, Ariz. Filed Aug. 12, 1927. Serial No. 212,511. 4 Claims. (Cl. 107—19.)

1,758,595—PROCESS FOR RECOVERY OF SULPHUR DIOXIDE FROM OILS CONTAINING SAME. Giuseppe Cattaneo, Hilversum, Netherlands, assignor to Allgemeine Gesellschaft fur Chemische Industrie m. b. H., Berlin-Schöneberg, Germany. Filed May 27, 1926, Serial No. 112,136, and in Germany Mar. 5, 1926. 3 Claims. (Cl. 23—178.)

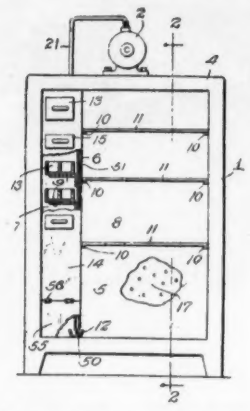
1,758,614—AIR SUPPLY FOR CAN BASKETS. Joseph A. Martocello, Philadelphia, Pa. Filed Feb. 15, 1927. Serial No. 168,265. 4 Claims. (Cl. 62—159.)

ISSUED MAY 20

1,759,029 — STUFFING-BOX PACKING. William Wishart, Clinton, Iowa, assignor to Climax Engineering Company, Clinton, Iowa, a Corporation of Delaware. Filed Jan. 6, 1926. Serial No. 79,670. 2 Claims. (Cl. 286—11.)

1,759,513—REFRIGERATOR. Thomas J. Little, Jr., Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed Aug. 16, 1926. Serial No. 129,312. 6 Claims. (Cl. 62—116.)

2. In combination, a refrigerator cabinet having a storage space therein, a



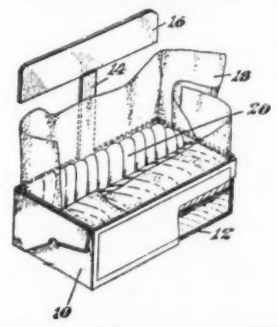
sheet-like refrigerant expansion chamber extending between the top and bottom thereof positioned within said storage space and dividing the same into separate compartments of materially different volumes, and ledges in thermal contact with said expansion chamber for combined heat absorbing fins and receptacle supports.

1,759,534—REFRIGERATING APPARATUS. George Andresen, Chicago, Ill., assignor to W. B. Parkyn. Filed Dec. 18, 1926. Serial No. 155,646. 22 Claims. (Cl. 62—127.)

1. In refrigerating apparatus, the combination of a refrigerating element, a liquid-refrigerant course communicating with said element, means for delivering liquid refrigerant to said course, and valve mechanism in said course comprising a casing, a valve controlling the flow of refrigerant from said casing, and means controlling said valve and movable by the pressure of gas entering said casing, to close said valve.

1,759,578—MILK-COOLING DEVICE. William C. Kelso, Rushville, Ind., assignor, by direct and mesne assignments, to William J. Wilson and Pearl Wilson, Rush County, Ind. Filed July 2, 1928. Serial No. 289,897. 8 Claims. (Cl. 257—74.)

1,759,682 — METHOD OF PREPARING CONSUMER PACKAGES. Clarence Birdseye, Gloucester, Mass., assignor, by mesne assignments, to Frosted Foods Company, Inc., Dover, Del., a Corporation of Delaware. Filed June 24, 1929. Serial No. 373,277. 8 Claims. (Cl. 62—170.)



1. The method of preparing consumer packages of a perishable food product, which consists in enclosing the product in a container having walls to shape the product and a surface presenting a substantial area of thin flexible pellicle, and then freezing the product, while so shaped and confined, by contact of a heat-conductive member coextensive with its pellicle-covered area.

PATENTS
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Solicitor of Patents - Refrigeration Engineer
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LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other material recently issued.

Manufacturers are requested to send copies of new trade literature to Electric Refrigeration News.

Armstrong

"Industrial Applications of Cork," a booklet prepared by the Armstrong Cork Company, Lancaster, Pa., is now ready for distribution. In addition to the many uses for cork, the booklet covers the properties of cork. There are mentioned many uses for this product, of which refrigeration is listed as a leading one.

Kelvinator

The Sales Promotion Department of the Kelvinator Corporation has just completed a loose leaf booklet entitled "The Automatic Refrigeration Manual for Architects and Builders." The manual is 46 pages, and is profusely illustrated with all Kelvinator domestic and apartment house models, including the new apartment line just announced. The book also carries pictures of a number of the largest apartment houses of the country which are equipped with Kelvinators.

Reco

Electric milk cooling cabinets constructed of boiler plate are described in a folder now offered to the trade by Domestic Utilities, Baltimore, Md. Six cabinets are available in capacities from two to twelve cans. All Reco cabinets are finished in sea green pyroxilin. The Coldbloc pump for circulating cold water from the cabinet through the tubular cooler is also illustrated.

Rome

Bulletin No. 102 has been prepared by the Rome-Turney Radiator Company, Rome, N. Y., describing Rome Helicalfin tubes for heaters, radiators, refrigeration condensers and oil coolers. Standard sizes of Helicalfin tubing are mentioned in the bulletin and construction of seamless drawn copper tube is outlined. All types of Rome condensers are formed without joints or return bends.

Romeson

Industrial refrigeration is the title of a folder offered by the Romeson Manufacturing Corp., Titusville, Pa. Two compressors of the water-cooled type, with capacities of 1/3 and 1 h. p., respectively, are covered therein. Both are single blade, double acting rotary compressors. Water cooling data is listed in two tables.

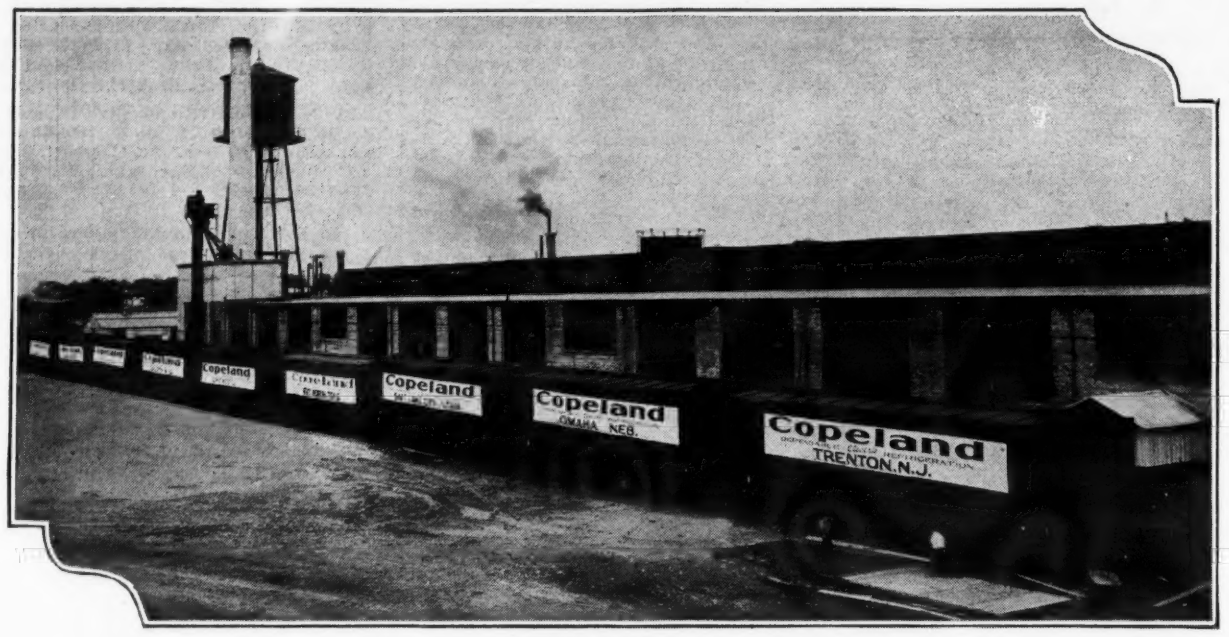
JAMES SPEAR CO. QUITS REFRIGERATION FIELD

Philadelphia, Pa.—The James Spear Stove & Heating Co., 1823 Market St., manufacturers of the Spear ice water generator, Spear milk and water coolers, has discontinued producing these products. The assets of the refrigeration division of the Spear company are being liquidated at the present time.

LISTING OWNERS HELPS G. E. SALES

Jacksonville, Fla.—The Automatic Electric Equipment Co., General Electric refrigerator dealers here, is increasing sales through the use of a list of satisfied refrigerator owners. This list contains the names of many owners of General Electrics in the vicinity, and prospects are often invited to call or visit them.

Enroute to the Market



CARLOAD shipments to the four corners of the country left the Mt. Clemens, Mich., plant of Copeland Products, Inc., on one day last week. Daily trainload shipments have been the rule at the Copeland plant since earliest spring, but usually each has been directed to a single section of the country, or at the most not to more than two. The trainload pictured above was the second leaving that day, the first of 21 cars being consigned to New England and the New York City territory.

L. SERDIUK TO DIRECT PEERLESS ADVERTISING

Chicago, Ill.—Leonard Serdiuk, formerly in charge of direct mail advertising for the ventilation, refrigeration and household appliance divisions of the Commonwealth Edison Company, and more recently a partner in the Continental Advertising Agency, has been appointed advertising and sales promotion manager for the Peerless Ice Machine Company. He has sold his interests in the agency and has taken up his duties in the merchandising and advertising end of the new Peerless cooling fan, under Richard W. Kritzer, vice-president in charge of sales.

Richard W. Kritzer stated that the Peerless company will concentrate on the local field for the present, expanding its area of activity as the production department is geared to fill the increasing demands. "Surrounding cities like Detroit and Milwaukee will be the scenes of our efforts in the near future, and our plan is to add dealers to our list slowly as we become better able to give them our fullest co-operation and the best of service," Mr. Kritzer said.

HEINEMANN ELECTRIC CO. OFFERS NEW CIRCUIT BREAKER

The Heinemann Electric Co., Trenton, N. J., has developed a circuit breaker designed to replace both switches and fuses. It is a combination magnetic breaker with a thermostatically controlled inverse time limit.

Mounted on a cold mold base with a Bakelite cover, this device may be attached to the equipment that it is to protect, or may be mounted in some convenient point with an extension cord run to it and then to the equipment.

Heinemann "Re-Cirk-It" is the name of this new device and it is available in capacities from 4 amperes to 15 amperes and corresponding horse-power ratings.

KULAIR CORP. MOVES OFFICES

Philadelphia, Pa.—Offices of the Kulair Corporation were recently moved from the factory at Kensington Ave. and M St. to 1609 Finance Bldg., 1428 S. Penn Square here. W. W. Moss, president, and E. S. Lape, treasurer and general sales manager, will both make their headquarters at the new offices.

REQUESTS FOR INFORMATION

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

Porcelain Water Pans

Query No. 368—"We have received requests for a porcelain drinking water pan with a push faucet installed for refrigerator use. Can you advise us of manufacturers making such an article?"

Ice Cube Saw

Query No. 369—"We have a customer who would like to obtain information relative to an ice cube saw, to be used in connection with a small ten-pound can of ice."

Freezerator

Query No. 370—"I am wondering if you can give me some information in regard to a refrigerator which I purchased second-hand. The name appearing on it is 'Freezerator' stamped on the radiator cover and there was a name plate attached to this bearing the name 'McCord Mfg. Company, Detroit, Mich.' I wrote to this company but they could give me no information, suggesting that I take the matter up with you.

"Can you tell me who manufactures this machine, if it is still made, and if not, about how many years ago it was made. The party from whom I purchased, stated that the machine was still on the market; in fact, said that it had been used a few months.

"I shall greatly appreciate any information you can give, or suggestions you may have to offer as to whom I can get to set the machine up and put it into running order. What is the general opinion of this machine as to performance, etc.?"

Export Business

Query No. 371—"We have received an inquiry from our Porto Rican office, saying that a firm there is interested in getting in touch with the American manufacturer of a refrigerator similar to Electrolux, except that helium and oxygen are used. It is thought that the factory is located somewhere in New Jersey."

QUOTA SMASHED IN RECENT CONTEST

Minneapolis, Minn.—According to B. F. Smith, manager of Kelvinator sales for the Northwestern States Power Co., the "Reach the Pole" sales campaign, which has been under way in the northwest for some time, closed recently with a record of 193 per cent of quota.

HARPER-MEGEE CLOSES MULTIPLE ORDER

Seattle, Wash.—D. A. Dane, sales manager for Harper-Megee, Inc., Copeland distributors, announced recently that his firm has been awarded the contract for the installation of a multiple Copeland refrigeration system in the new apartment which is to be erected on Belmont Place, Seattle, by the Anhalt Company.

STARR FREEZE CAMPAIGN UNDER WAY AT DAYTON

Dayton, Ohio—A trade-in campaign, scheduled to last ten days, is being conducted by the Starr Piano Company to help introduce its new Starr Freeze refrigerator. The fact that the Starr Freeze had been placed on the market was printed in the May 7 issue of ELECTRIC REFRIGERATION NEWS.

Purchasers of Starr Freeze refrigerators during the campaign will be permitted to turn in their old ice boxes and receive a credit therefor on the purchase price of the new refrigerator. Several models of the Starr Freeze, which is made in Richmond, Ind., are being shown in the Starr Piano Company's Dayton store, on Main Street.

OMAHA MUSIC CO. TAKES ON ICE-O-MATIC

Omaha, Nebr.—The Schmoller & Mueller Piano Company of Omaha has entered the refrigeration field from both a retail and wholesale standpoint. Ice-O-Matic sales will be pushed by G. C. May, secretary and treasurer of the company. At present this company is conducting one of the largest music houses in the West and also selling radios. The same sales force will be used to put over the refrigerator.

The Schmoller & Mueller Piano Company has ten retail stores in Nebraska and Iowa, as well as the wholesale and retail store in Omaha. All will be actively engaged in selling refrigeration.

WILL REPRESENT COPELAND IN BOSTON TERRITORY

Boston, Mass.—Appointment as exclusive retail distributors in Boston for the Copeland electric refrigerator has been announced by the Refrigerator Sales & Appliance Corporation, 885 Boylston Street. The company is staging a series of lectures and demonstrations by Esther E. Kimmel, expert from the Priscilla Proving Plant of the Modern Priscilla magazine, at their salesrooms.

MIAMI G. E. MOVES

Miami, Fla.—The Miami Electric Refrigeration Company, 39 W. Flagler Street, has moved into larger quarters, The new store is located at 1405-1407 Biscayne Boulevard, and the change was made about the first of June. James H. Wilson is manager. The company handles General Electric refrigerators.

Business with the Miami Electric Refrigeration Company is particularly good. April was the biggest month for sales in the history of the company, which was organized in 1927.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance — Positions Wanted — fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

POSITIONS AVAILABLE

REFRIGERATION superintendent for factory who has had experience in building ammonia compressors. State experience and salary required. All information confidential. Box No. 266.

WANTED — Experienced commercial salesman to sell Frigidaire. Byars-Forgy Refrigeration Co., 102 E. Lafayette Street, Tampa, Fla.

POSITIONS WANTED

MARRIED and happy, thirty-two years of age. My technical training and twelve years' experience have given me thorough knowledge into all angles of refrigeration. Starting with service and installation, at present have charge of sales in large territory. Desire position where leadership, ability and knowledge of the product mean a future. Best of references. Box 255.

CHIEF Engineer Available. Eight years' experience in domestic and commercial refrigeration with popular manufacturer charge of engineering design and production methods. Wishes to communicate with manufacturer. Box 253.

ENGINEER with wide experience in estimating, installing and servicing all types of electric refrigeration equipment, desires new connection with financially responsible manufacturer, distributor or dealer after July first. Have technical training and practical experience necessary to take full management of service department, including estimating. Will guarantee to reduce your costs. Box 259.

EXECUTIVE with large electric refrigerator manufacturer is contemplating making a change. Experienced in service and engineering administration. Box 257.

MISCELLANEOUS

WE are desirous of purchasing large quantity of refrigeration units for self-contained cabinets ranging in size from 4½ cu. feet to 12 cu. feet inclusive. Would invite correspondence giving detailed specifications and photographs. We will then write for prices. Address Box 258.

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Refrigerated Food Section

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office.

The business newspaper of the refrigeration industry

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CORK

Insulation for Quick Frozen Products Will Be Made Subject of Study

Lancaster, Pa.—Realizing the important part that proper insulation is destined to play in the development of quick-frozen foods, and being anxious to proceed with as full a knowledge as possible of the problems involved, the Armstrong Cork & Insulation Company has formed a Frozen Foods Development Committee. This committee will have as its duty the thorough investigation of the varied insulation problems created by the advent of quick-frozen products.

Up to the present time, the refrigeration industry has had little experience in the handling and transportation of foodstuffs that must be kept well below the usual temperatures, and which, by their very nature, possess considerable refrigerating qualities within themselves. The new committee will start its work with a realization of this situation, and a determination to seek out the facts.

Armstrong, in the business of fabricating cork into its scores of forms for seventy years, is constantly expanding its research activities, on all phases of cork production, seeking more exact knowledge, improvements and new uses. The insulation division has its own laboratory in the research group at Lancaster, the home office. It has been working intensively for some time on the low temperature insulation problem.

The committee is made up of men from five departments: H. J. Krampe, assistant general sales manager, chairman; G. C. Denebrink, assistant general manager; E. C. Lloyd, chief engineer; Dr. C. C. Vogt, research scientist, and Ralph Winslow, advertising manager of the insulation division. These will act as a clearing house between their departments, so that all can work to the end of meeting the need for specially efficient insulation that quick-frozen and process-frozen foodstuffs have brought in their wake to packing plants, storage, refrigerator car, refrigerator truck, and dealers' display phases of the new set-up.

One of the first acts of the committee was to offer to all concerned in providing equipment for the frozen foods business the engineering and research facilities of Armstrong. There will be no watchful waiting at Lancaster to see which way the refrigeration cat will jump; the idea is, rather, to keep one jump ahead of the cat.

The committee, in its first meeting, showed itself to be well aware of the fact that has been brought out in so many ways in recent issues of ELECTRIC REFRIGERATION NEWS: that national distribution for frozen foods will not be possible until everyone along the distribution line is properly equipped to handle the foods after they leave the packing plants. The keystone of the arch, it believes, is insulation, for the freezing plant itself, for the railroad car, for the storage warehouse at the distribution centers, for the motor truck and, above all, for the dealers' display cases.

As a case in point, Mr. Denebrink reported to the first meeting of the committee that Cudahy Bros. & Co., installing a sharp freezing meat plant at Cudahy, Wis., is insulating walls with ten inches of corkboard. This thickness of insulation has been found very effective on low temperature work.

NEW COMPANY

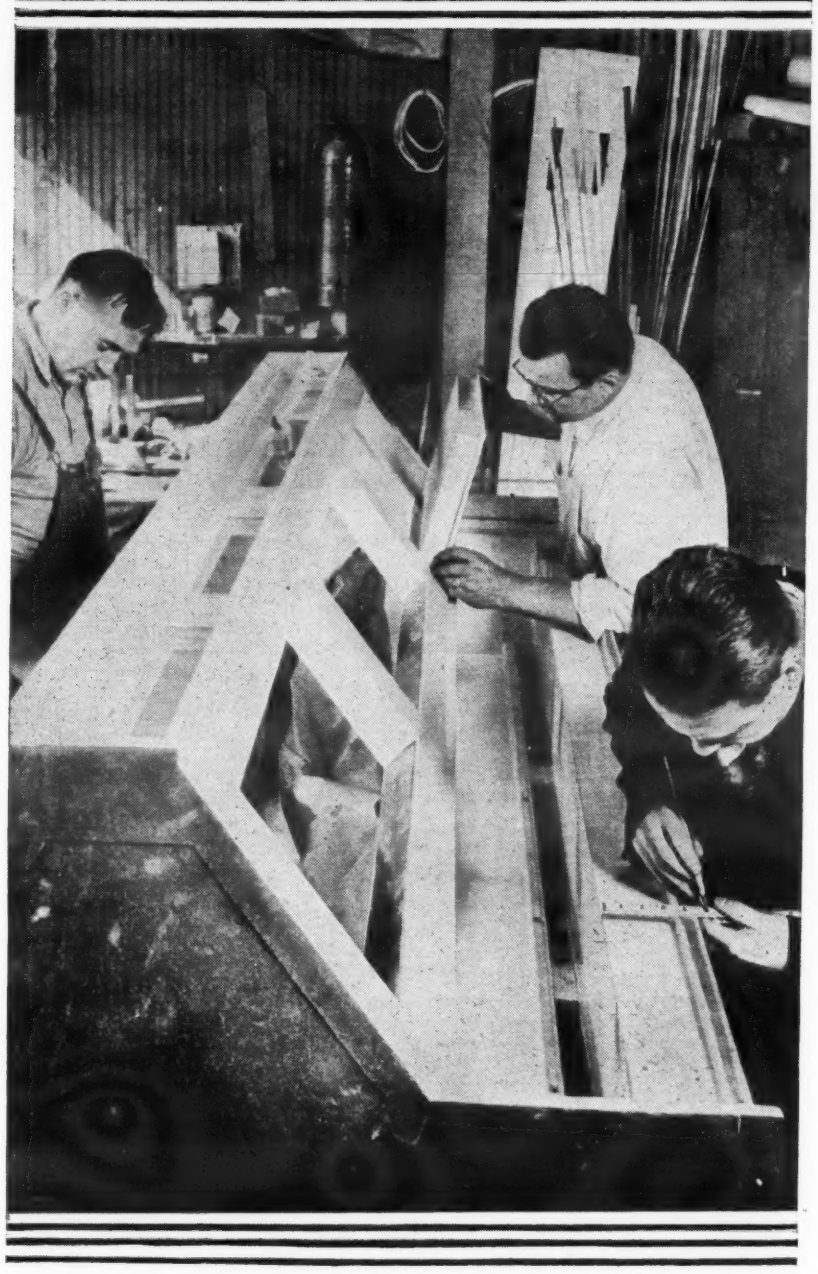
To Make Freezing Equipment

ANNOUNCEMENT has just been made of the formation of a company to engage in the quick-freezing equipment business. The systems upon which the equipment will be developed are inventions of G. R. Fennema and F. X. Burke, both of whom have been identified with the Kolbe Instant Freezing Systems since last October.

The equipment will be built by the Latendorf Conveying Corporation, Bayonne, N. J., well known manufacturers of bakery equipment.

The company will be known as Quick-Freeze Corporation, with main office in the Graybar Building, New York. Officers of the company include Charles B. Latendorf, president; F. X. Burke, executive vice president and general manager, and G. R. Fennema, secretary-treasurer.

Workmanship



Casemaking, when well done, becomes almost an art. This photograph was taken in the factory of Ottenheimer Bros., Inc., in Baltimore.

GEORGIA

Plans Thorough Test of Products

Griffin, Ga.—A series of experiments in the freezing of fruits and vegetables, which has been carried on for the last three years by the Georgia Experiment Station will be greatly expanded this year, and a marketing test to determine the public acceptance of quick-frozen products will be carried out. The Georgia Experiment Station, owned and operated by the state of Georgia, is situated at Experiment, on the outskirts of Griffin. A big farm and a group of well equipped buildings compose the laboratory, in which Director H. P. Stuckey and his assistants conduct their valuable work.

The freezing experiments are under the direct charge of J. G. Woodroof, associate horticulturist, who has been engaged in agricultural experimentation in various parts of the country for several years. In the past, most of the freezing was done with the station's ammonia operated refrigerating equipment, but last season some experimenting was done with dry ice. A special quick-freezing cabinet was purchased and was used for freezing strawberries, and one or two other products. In the past strawberries, pears, peaches, raspberries, blackberries, figs, dewberries, tomatoes and green peas have been slow-frozen at the Experiment Station with varying results, discoloration proving an enemy that had to be continually fought.

The plans for the present season call for the quick freezing of much larger quantities than in the past. The list will be headed by fourteen tons of peaches, and will include 1,000 pounds of strawberries and 1,000 pounds of figs, cherries, blackberries and raspberries. An adequate supply of especially made containers has been purchased, including waxed paper and glass containers large enough to hold one pound of the frozen fruits. The waxed paper containers are attractively labeled "Georgia Brand Fresh Frozen Fruits."

Freezing of various fruits with dry ice is now under way, the first peaches being frozen on May 27. Some trouble was encountered when the glass containers were used, as they failed to stand the extremely low temperatures. The practice at Experiment has been to freeze the fruits in a syrup consisting of about 45 per cent sugar and water, but in some cases Mr. Woodroof is try-

(Concluded on Page 8, Column 5)

NEW YORK A. S. R. E. MEMBERS ENJOY QUICK-FROZEN FOODS

New York, N. Y.—Members of the New York chapter of the American Society of Refrigerating Engineers discussed quick-frozen foods in two senses of the word at a recent meeting. They got together at the Governor Clinton Hotel, talked over various phases of quick freezing, and then sat down to a dinner which consisted mainly of quick-frozen products. They ate frozen fish fillets provided by the Atlantic Coast Fisheries, lamb chops, quick-frozen by Swift & Company, and frozen peas and figs, prepared by Libby, McNeil & Libby.

The A. S. R. E. men were unanimous in their praise of the various quick-frozen items on the menu.

ARIZONA STATE CAPITOL TO GET TEMPRITES

Phoenix, Ariz.—The W. E. Burke & Son Company has just secured the water cooling job for the Arizona State Capitol Building.

It is to be a multiple installation of five Temprite model No. 35-W coolers—a unit designed for remote use with standard drinking fixtures.

This Phoenix concern is a dealer under the Parker Ice Machine Co., Temprite distributors in Los Angeles.

ENGLISH

Experiments Prove Successful

London, England—Mention has been made in previous issues of the Refrigerated Food section of ELECTRIC REFRIGERATION NEWS of the experimental work being done by M. T. Zarotschenzeff for the Liverpool Refrigeration Co., Ltd., at Warrington. The greater part of the work at Warrington has been with fish, but Mr. Zarotschenzeff also has been experimenting with several kinds of meats. Some of the results of his recent work are published briefly in *Cold Storage* of London.

Among the fish frozen by the "Z" brine mist system were hake, codling, plaice, turbot, haddock, mackerel, sole, ling, cod and salmon. These fish were received daily fresh from the sea, and upon arrival were unpacked and placed in fresh water in order to bring their temperature to that of freshly caught fish, and to remove the cooling effect of the ice used for packing. They then were frozen in the brine mist freezing cabinet at temperatures varying from –1 to –4.5 degrees F. After being taken from the freezer they were washed in fresh water at a temperature of 68 degrees F. in order to remove surface brine. They then were glazed by a dip in fresh water at 35 to 38 degrees F. and placed in storage at 0 F.

The meat products frozen included different cuts of pork, beef and lamb. They were wrapped in cellophane and placed in special brine-tight containers before entering the freezers. Fish fillets were wrapped in the same manner. All of the meats were frozen at a brine temperature of –2 degrees F.

Freezing time for the various meat cuts was uniformly about 30 minutes. Some of the fish took longer, the turbot requiring an hour and one-half.

After remaining in storage for a considerable period the fish and meats were withdrawn and thoroughly inspected. They were found to be in excellent condition.

DEMAND

In Springfield for Frozen Foods Brings New Factor Into Situation

Springfield, Mass.—The adage that good news travels fast is proving true here in Springfield, where the fame of quick-frozen foods has spread so quickly that the limited number of stores selected by General Foods for its experimental campaign are not enough to suit the public. As a result the packers who are producing quick-frozen meats are discovering an unusual demand for these products in Springfield and the surrounding territory.

The identifiable packaged cuts frozen and packed by Swift & Company may be purchased in at least twenty-five stores, and although no advertising is being done and therefore sales are not large, the merchant with a small store feels that it is his duty to his customers to have at least a limited supply of quick-frozen meats on hand. The lack of proper equipment in which to handle the quick-frozen products curtails the activities of these converts to the cause, but at least they know what their public wants.

In spite of the absence of many families from the city because of the Memorial Day holiday, the Birdseye Frosted Foods made a good record for the week-end. The total sales were close to the best marks made in the past. The Rood & Woodbury store on Main Street, managed by Tom Levine, did an unusually good business.

Warm and humid weather is putting the display cases to the test. They are getting the best sort of chance to show whether or not they can stand up and keep the low temperatures necessary.

The introduction of hamburger steak, it is learned, has more than fulfilled expectations as a sales builder. Inasmuch as this addition was made at the urgent request of many customers, its success was considered assured, but the volume of sales has exceeded calculations. Another item, regarded as one of the most modest of the line—spinach—has rolled up a surprising volume. In a season when fresh spinach is plentiful, this Birdseye product is proving a heavy seller, which is looked upon as a strong testimonial to Birdseye quality.

Before many days, it is confidently believed, broiling chickens will make their entry. Delay in settling upon the most desirable method of packing this product and in getting the approval of the United States Department of Agriculture's food administration—a routine procedure that has to be gone through with—is said to have prevented an earlier start with this item, awaited with keen interest by Birdseye customers. Some half a dozen new items are expected to be put on sale within the next two months.

While demonstrations of methods of preparing Birdseye foods have been discontinued in this city, as have the house-to-house calls by General Foods representatives, the story of the Birdseye products is being carried into the surrounding territory, in response to requests from women's organizations and prospective customers outside this city.

Two organizations have taken an interest in furthering this educational work. Sensing the importance of the Birdseye development, the home bureau of the Hampden County Improvement League, having headquarters on the Eastern States Exposition Grounds in West Springfield, invited the General Foods Corporation to send a lecturer to appear at the three monthly demonstrations bringing to a close the organization's field meetings for the season of 1929-30. Accordingly, Miss Una R. Wood, of the corporation's educational department, appeared at the meetings in Westfield, Palmer and Chester, giving an exposition of the Birdseye system. All these meetings were well attended.

The other body that is taking a live interest in the subject is the American Home Makers, Inc., also having its main office on the Eastern States Exposition Grounds, with branches in various eastern cities. This organization is headed by Mrs. James J. Storrow, a prominent Boston woman who is expending large sums in developing a typical New England village to house the home department of the exposition. This village is composed of genuine antique Colonial structures from one to two centuries

(Concluded on Page 8, Column 3)

BIRDSEYE

On Quick-Frozen Foods

Members of the American Institute of Refrigeration, at their annual meeting in Washington recently, heard Clarence Birdseye talk about quick-frozen foods. Much of what Mr. Birdseye said has been printed before, some of it in these columns, but his address was such a thorough exposition of the subject that it is printed herewith in full. Those who have read the Refrigerated Food section from its inception will find their knowledge of quick-frozen products augmented, and new readers will have a golden opportunity to acquaint themselves with the essentials of a development in the preparation and distribution of foods which is constantly gathering force.

By CLARENCE BIRDSEYE
General Seafoods Corporation

THE freezing of perishable food products in low-temperature sharp freezers has been of tremendous value to the world, and the industry in the United States has grown to huge proportions. Nevertheless, an impartial observer must admit that as a rule even the best sharp-frozen seafoods, meats and poultry are not as good as fresh products of the same class. If this were not the fact, frozen foods would not sell at a lower price than fresh products of the same kind in the same market.

In recent years, however, it has been found that the inferior quality of frozen foods is not due merely to the fact that they are frozen, but rather to improper methods of freezing, packaging, and storing. By improved methods, and new ways of packaging, a great advance in freezing practice has been brought about; and it is now definitely known that frozen flesh products of practically every kind may be, even after months of storage and shipment for thousands of miles, exactly the same quality as before they were frozen. Obviously, methods which accomplish such results will have a tremendous effect on the refrigeration industry.

In order that we may clearly understand why these new quick-frozen products are superior to even the best sharp-frozen foods, we must consider the nature of animal flesh and what happens when it is subjected to low temperatures.

All animal matter—whether fish, meat or poultry—is composed of a multitude of tiny elastic-walled cells, filled with jelly-like fluid containing in solution various salts, among which may be mentioned sodium and calcium. This jelly-like cell material, because of its salt content, does not freeze homogeneously. Instead, fresh water ice crystals begin to form throughout the cell substance, and in the moisture of the intercellular spaces, as soon as the temperature gets down to about 31° Fahrenheit. As the temperature is further lowered, more and more of the liquid is frozen in the form of fresh water ice, leaving behind an even more concentrated solution of the various salts. The entire water content of haddock, for instance, does not freeze until the temperature has been lowered to approximately —68° Fahrenheit; but about seventy-five per cent of the moisture is frozen when the temperature reaches approximately 25° above zero, Fahrenheit.

It is a law of chemistry that the more slowly crystals are formed, the larger they become. Therefore the size of ice crystals in frozen flesh increases with the time required for freezing. In other words, products frozen slowly will contain comparatively large ice crystals, whereas those which have been frozen with extreme rapidity will contain crystals of minute size. It is obvious that since more than half of the total water content is frozen between the temperatures of 31 and 25 degrees above zero, Fahrenheit, every effort must be made to pass the products through this "zone of maximum crystal formation" as rapidly as possible. Thus, and only thus, can we be sure of the microscopical crystals which are necessary to perfect quality.

In the case of slow-frozen products, a proportion of the crystals may grow to many times the size of the individual cells, and such crystals disrupt the tissue, piercing and tearing the delicate cell walls and reducing the flesh to a porous and pulpy mass.

What Happens When Slow-Frozen Products Are Thawed

When slow-frozen flesh foods, which have had their tissue crushed and broken by large ice crystals, are thawed, the juices escape and carry with them much of the soluble protein and mineral matter. Such slow-frozen products are necessarily of an unattractive appearance and more or less lacking in flavor and food value. Slow-frozen products lose weight by shrinkage during freezing, and are usually more or less discolored, because the blood becomes oxidized through prolonged exposure to the air. Natural "bloom" is conspicuous by its absence. "Freezer-burn" is caused by a combination of desiccation and oxidation.

Quick Freezing Does Not Damage Flesh

But if flesh is frozen with extreme rapidity—that is, if the moisture in each individual cell is congealed in minutes rather than hours—the ice crystals are not given time to build up and are so microscopical that they cannot tear the cell structure or otherwise damage the tissues. Such quick-frozen products, when thawed, are the same as before they were frozen. There is no shrinkage; and the flavor, appearance, food value and keeping qualities are unaltered.

We may, therefore, describe a quick-frozen product as one which has been frozen so rapidly that the ice crystals are too microscopical to cause damage Such products cannot be produced in ordinary sharp-freezers even by the use of low temperatures, because still air is a very poor conductor of heat. In order to secure extremely rapid freezing, it is necessary to bring the product into contact with very rapidly circulating cold air, cold liquid, or exceedingly cold metal surfaces. The last named method seems to be the only one so far worked out, which is commercially feasible for packaged products. Moreover, since the time to freeze flesh increases more or less as the square of its thickness, it is obviously desirable that the flesh be placed between two metal surfaces, so that the heat may be extracted simultaneously from both sides.

Deterioration During Cold Storage

But quick freezing alone will not insure the delivery of a perfect product, for most flesh products are either seasonable or must be shipped long distances before reaching the consumer. Such foods must be protected from deterioration during storage and distribution. Let us consider, first, the problems involved in cold storage.

Desiccation, of course, is one of the most serious problems and is due to the passage of moisture-vapor from the product, through the air, to the refrigerating medium. Desiccation causes serious shrinkage, ruins the appearance of the product, and affects its flavor.

Oxidation—or rancidity—is another serious form of deterioration and is caused principally by the oxygen in the air coming in contact with the product. Oxidation is greatest in slow-frozen flesh, because the walls of the fat cells are ruptured, and the fat is thus made more readily available for oxidation.

Loss of natural "bloom," absorption of undesirable odors and flavors, and other contamination, are other factors which often seriously affects the quality of stored flesh products.

Damage During Storage May Be Prevented

All of the above forms of damage during storage may be minimized or entirely eliminated by property packaging the product before it is quick-frozen, thereby preventing loss of moisture-vapor and contact with the air of the storage room. It is essential that the products be packaged before rather than after freezing, because individually frozen pieces are unyielding and of irregular shape, and cannot be fitted into cartons without the loss of much space and the inclusion of air, which accelerates oxidation.

We have experimented with a great variety of methods of packaging products to be frozen, and believe that the best package now available is a rectangular waxed cardboard carton, lined with either waxed vegetable parchment paper or moisture-proof Cellophane, and wrapped with waxed glassine paper, heat sealed. It is essential that the package be compactly filled, moisture-vapor-proof, airtight, and rectangular in shape. Only such a package can be stored and shipped with maximum of efficiency.

Keeping Qualities of Quick-Frozen Meats

Generally speaking, the colder the storage temperatures, the longer properly packaged quick-frozen products may be held without deterioration. In our experience, oily products such as mackerel fillets should be held at from 5 to 10 degrees below zero, Fahrenheit, and even non-fatty flesh such as haddock fillets should not be stored for long periods at higher than 5 degrees above zero.

Quick-frozen flesh products, properly packaged and stored, will keep their original appearance and flavor almost indefinitely. It has been definitely proven that such diverse products as shrimp, oysters, chops, sausages, broilers, ducks, and game are perfect at the end of a year's storage.

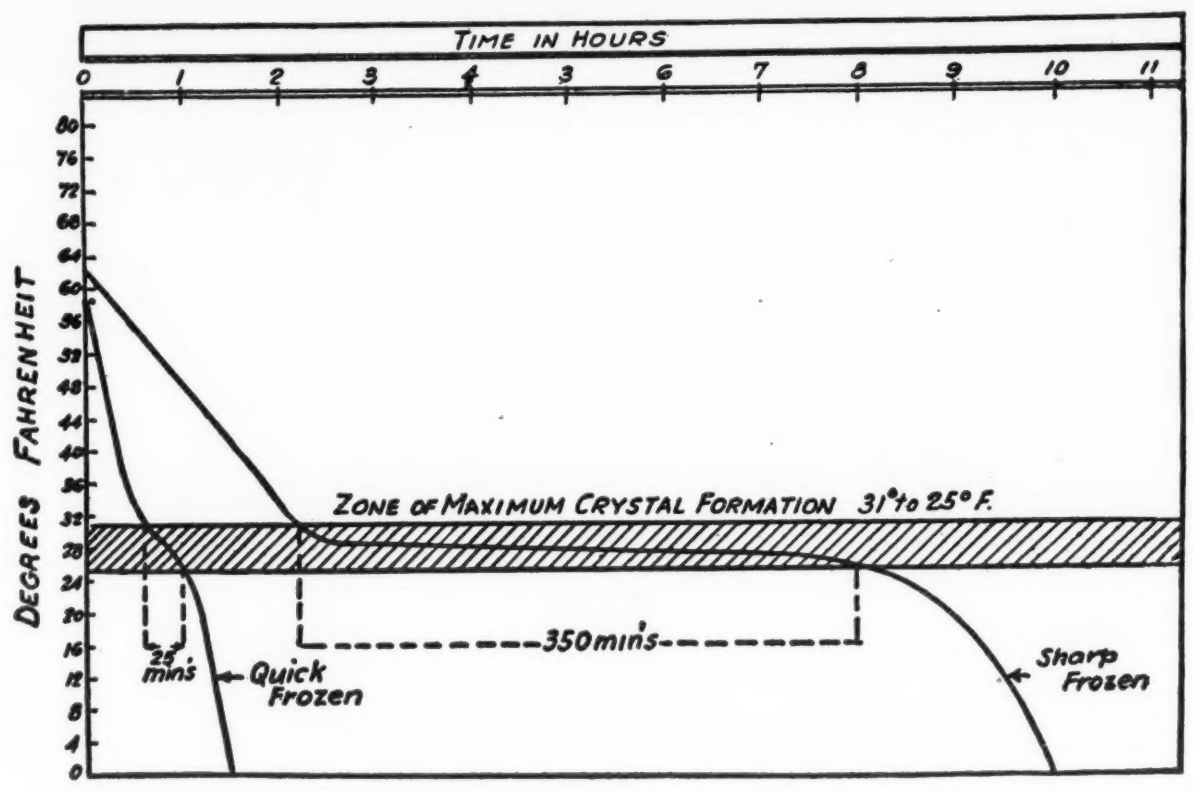
Shipment and Distribution of Quick-Frozen Packaged Foods

The only entirely safe way to distribute packaged perishable foods is to make sure that they remain hard frozen until they reach the consumer. Such foods contain within themselves a large amount of refrigeration, and if placed in well insulated shipping containers may be transported for long distances even by ordinary express or parcels post. For this purpose ordinary corrugated fiberboard containers, with the proper number of pads and liners, are admirable. Corrugated fiberboard has about the same insulating value as good sheet cork, and is light, strong and inexpensive. Such a container having an aggregate wall about an inch thick and holding fifty pounds of food, costs less than twenty-five cents, including two-color prnting and all labor in connection with setting up and closing. It will stand shipment by express and even in the hottest weather will keep its contents hard frozen for at least three days —and perfectly fresh, though partially thawed, for twice that long.

Most shipments of quick-frozen flesh products are made in carload lots by refrigerated freight, and for that purpose ordinary meat cars are entirely satisfactory. In shipping fish we have found that in cool weather it is not

(*Continued on Page 4, Column 3*)

Sharp Freezing and Quick Freezing


TIME IN HOURS
0 1 2 3 4 5 6 7 8 9 10 11
DEGREES FAHRENHEIT
80 76 72 68 64 60 56 52 48 44 40 36 32 28 24 20 16 12 8 4 0
ZONE OF MAXIMUM CRYSTAL FORMATION 31° to 25° F.
25 min's
Quick Frozen
350 min's
Sharp Frozen

Time Required to Sharp-Freeze and Quick-Freeze in Center of a 2-Inch (5-Cm.) Carton of Haddock Fillets

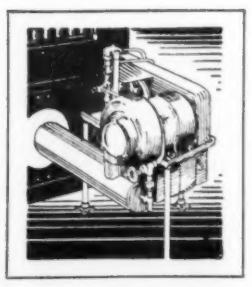
CREATING MORE INTEREST BY CREATING

More Sales . . .

THERE may be better ways of getting a man interested in a proposition than by showing him how to *make money,* but they don't occur to us at the moment . . . Which no doubt accounts for the fact that prospective oil burner dealers the country over are showing an ever-increasing interest in the QUIET MAY franchise . . . Here is a franchise which opens the way to *more* sales opportunities—*more* profit possibilities—than any other in the field today. Giving the dealer every advantage of powerful selling and advertising cooperation, it offers also the

QUIET MAY
PROFIT SHARING PLAN

Thru this unique plan, QUIET MAY dealers in local territories are enabled to add to their own earnings *extra profits* from the world-wide business of the May Oil Burner Corporation . . . The whole story is an interesting one—the coupon below will bring you the facts.



MAY OIL BURNER CORPORATION, BALTIMORE, MD.

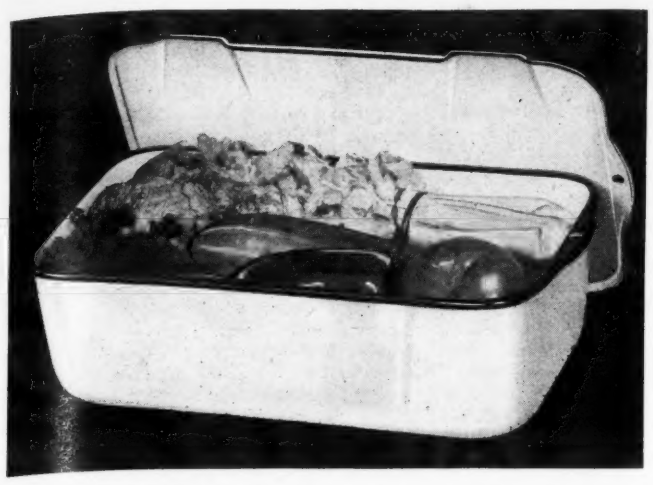
MAY OIL BURNER CORPORATION
Dept. D-64, Baltimore, Md.

If your dealer proposition is half as interesting as it sounds, I'd like to know more about it.

Name.....

Address.....

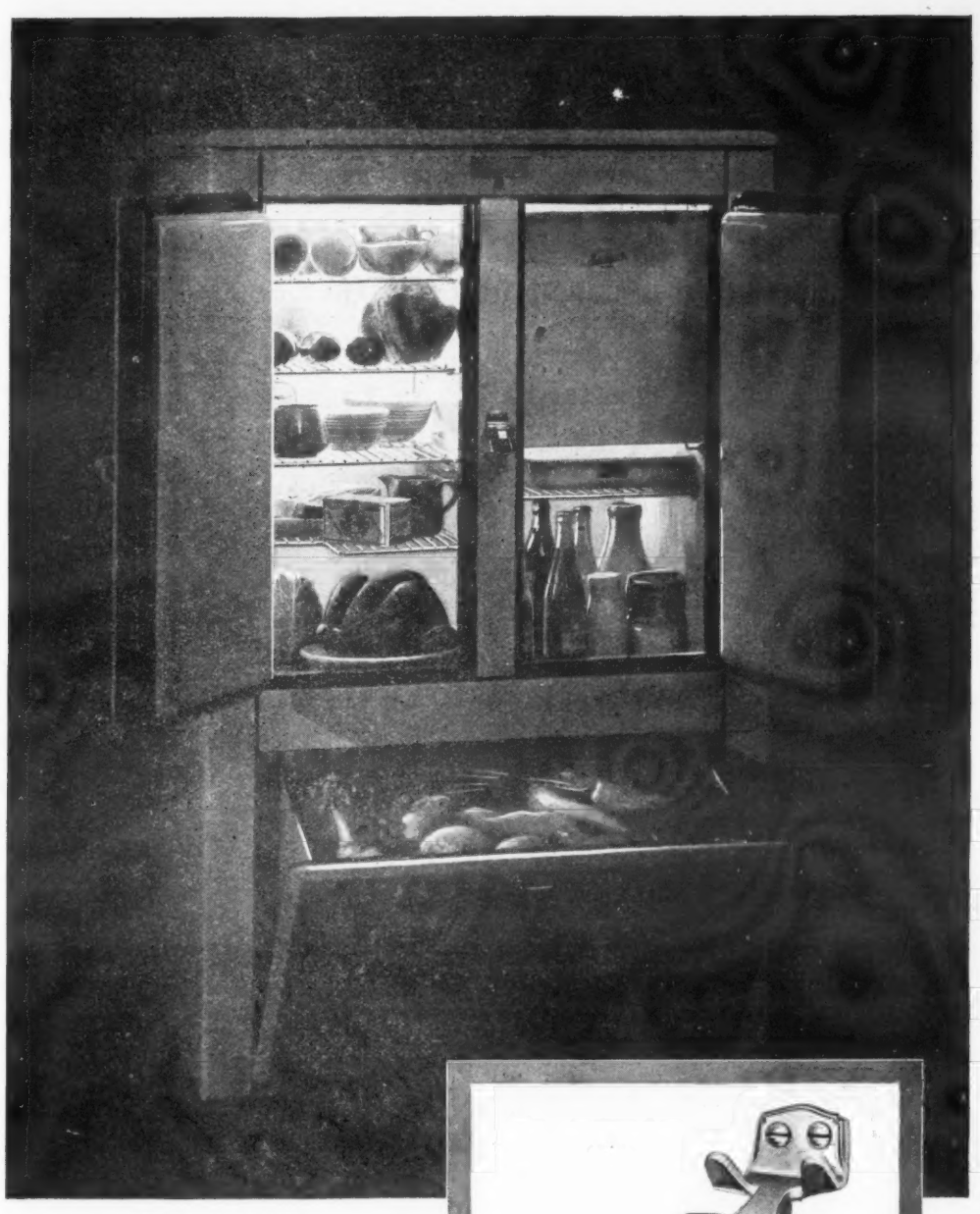
City.....*State*.....



VEGETABLE CHILTRAY *By* SEEGER

For the keeping of Lettuce, Celery, Parsley, Radishes, Tomatoes and other greens in a crisp, snappy wholesome condition, retaining original freshness and flavor.

Individual features in



ELECTRIC LIGHT

A revelation in convenience, clearly illuminating entire Cabinet interior.

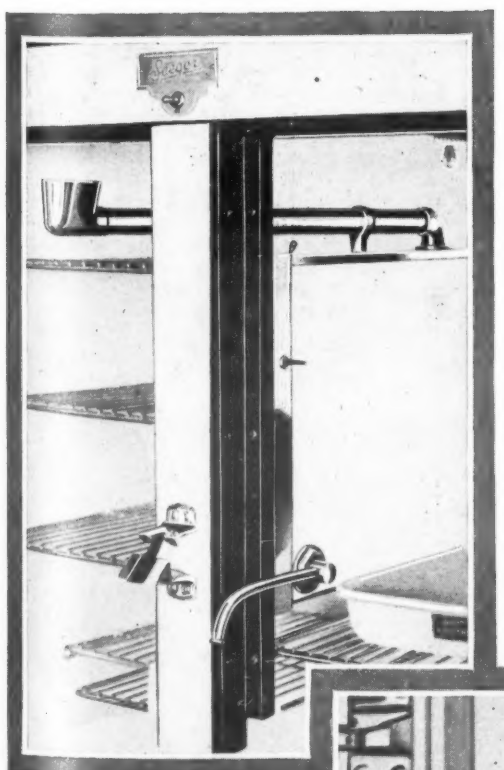
CABINETS BY

Seeger

SAINT PAUL

A presentation of some of the exclusive features in the residence line Cabinets by Seeger, for the convenience of the purchaser. These outstanding adjuncts to the admittedly sturdy construction, adequate insulation and thoroughly competent refrigeration cabinets are sales promoting factors.

For easy and quick sales nothing equals this new and beautiful Residence line. Display of Cabinets by Seeger are an asset for progressive dealers.



SEEGER WATER TANK

A novel and unique innovation for cooling water—convenient, practical and simple in operation.

SEEGER REFRIGERATOR COMPANY

SAINT PAUL, MINNESOTA

389 Madison Ave.
New York, N. Y.

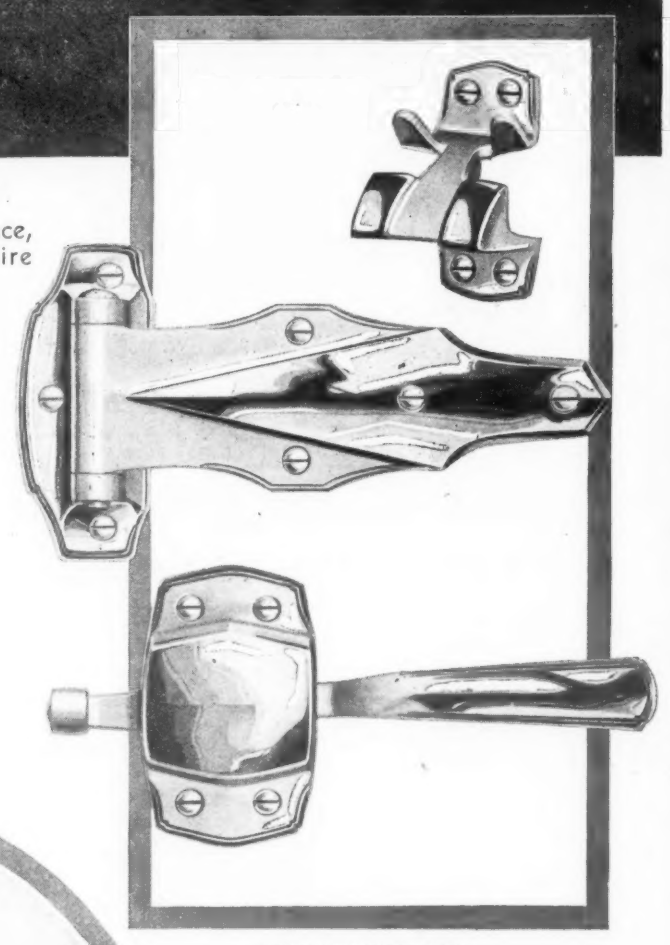
26-28 Providence St.
Boston, Mass.

655-657 So. LaBrea Ave.
Los Angeles, Calif.

228 No. LaSalle St.
Chicago, Ill.

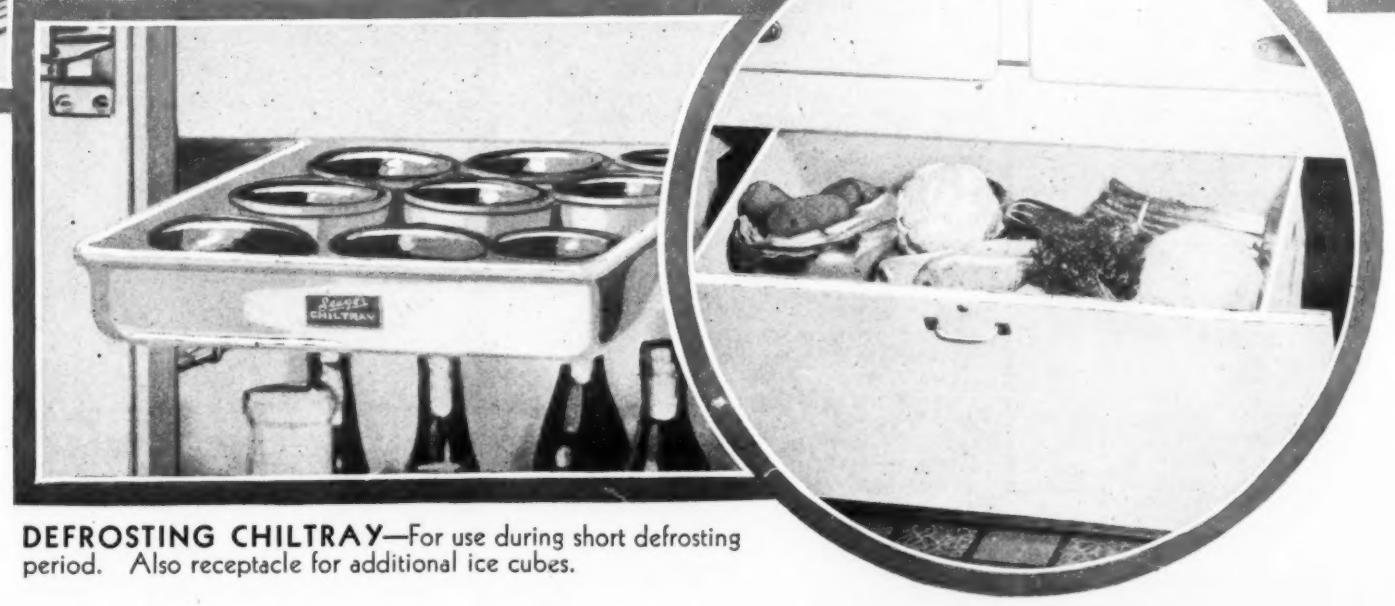
VEGETABLE BIN

For the specific purpose of fruit and vegetable storage—food conveniently accessible.



THE HARDWARE

Chromium Plated hinges, and roller type locks—modern in appearance and practical in performance.



DEFROSTING CHILTRAY—For use during short defrosting period. Also receptacle for additional ice cubes.

TEDFORD TO REPRESENT ST. LOUIS COMPANY

Des Moines, Iowa.—A distributing office of Allied Store Utilities Company has been opened in this city by John V. Tedford. The office will represent the Hussmann Refrigerator Company of St. Louis. A sales organization is being developed to cover eastern Iowa and western Illinois.

SUPER
AUTOMATIC OIL HEATOR

Satisfied Users

of electric refrigerators make ideal prospects for oil burners. Oil burners help to sell refrigerators, too.

Straighten out your sales curve with the SUPER Automatic Oil Heator.

THE SUPER OIL HEATOR CO.
PAWTUCKET, RHODE ISLAND

10 REASONS WHY
INSULITE
the Wood-Fiber Insulating Board
FILLS ALL THE REQUIREMENTS FOR REFRIGERATOR INSULATION

YOU REALIZE that the all important factor in refrigeration is the efficiency of the insulation material used. Then consider these superior features of Insulite.

It has

1. HIGH THERMAL INSULATING EFFICIENCY.
2. CONTINUOUS FREEDOM FROM ODORS.
3. DURABILITY—LONG LIFE.
4. IMPERVIOUSNESS TO MOISTURE.
5. ROT AND MOLD PROOFNESS.
6. STRUCTURAL STRENGTH.
7. ADAPTABILITY TO SPEEDY ASSEMBLY.
8. LIGHTNESS IN WEIGHT.
9. PRICE, STABILITY AND ECONOMY.
10. DOMESTIC SOURCE OF RAW MATERIAL INSURING PROMPT, STEADY DELIVERIES.

Remember—the great structural strength of Insulite makes it possible to reduce wood framing to a minimum. And furthermore—Insulite is cut to size, ready for application—reducing labor costs and material waste and speeding up production.

MAIL THIS COUPON

THE INSULITE CO.
(*A Backus-Brooks Industry*)
1200 Builders Exchange, Dept. 30F, Minneapolis, Minn.
737 Conway Building, Chicago, Ill.

OFFICES IN ALL PRINCIPAL CITIES

Gentlemen: Please send me your folder describing the advantages of Insulite for Refrigeration Insulation. Also, a sample of Insulite.

Name .....
Address .....
City ..... State .....

BIRDSEYE

(Continued from Page 2, Column 5)

even necessary to ice the bunkers unless the shipment is to be in transit at least five days. In summer we have no trouble in making shipments from coast to coast without having any part of the shipment thaw. Obviously, however, if less compactly packaged products, such as those which have been frozen singly and then wrapped and packaged, are to be shipped long distances, they must receive greater protection, and it seems to be essential to use mechanically refrigerated cars for such products.

I have indicated that frozen products can be shipped literally any distance. We now have a shipment of chops, raspberries, and fish, and, I believe, orange juice, on the way to Auckland, New Zealand. It was shipped a month ago, and won't get there for another month. This would not have been shipped if I hadn't felt confident it would arrive in perfect condition. We have shipped to Buenos Aires and been told the product when received was as perfect as if it had just been packed. We ship regularly to Cuba and the Canal Zone. We have shipped to Norway. Provided the product is held at a low temperature during transportation, it is just as possible to eat Cape Cod oysters in Cairo as it is to eat them in Boston, and have them equally good.

Cost of Quick-Frozen Products

To the casual observer it will seem inevitable that such packaging and quick freezing must increase the net cost to the consumer. Such, however, is not the case. In fact, exactly the opposite is true; for savings in manufacture, distribution, spoilage, dispensing, and preparation in the home much more than compensate for the cost of packaging and freezing.

Dispensing Quick-Frozen Products

Obviously the dispensing of packaged perishables must be as carefully protected as the other steps in getting the products from the producer to the consumer. Where a dealer carries only one quick-frozen product, such as haddock fillets, it is possible for him to watch the condition of the product carefully and deliver it without deterioration to the consumer. This has been proven by the tremendous increase in sales of quick-frozen fish fillets without the aid of any mechanically refrigerated display cases. Such, however, is not the case when the dealer attempts to handle a variety of frozen products. He must then keep them constantly under ample refrigeration, or else a percentage of them is bound to spoil.

As was to be expected, much confusion has attended attempts to develop mechanically refrigerated low temperature display and storage boxes. Nevertheless, although the effort is little more than a year old, substantial progress has been made and certain basic considerations are becoming generally recognized. The General Foods Corporation has marketed a great variety of quick-frozen products, and our experience in this connection may therefore be interesting.

We believe that the low temperature boxes should be separated into display and storage sections. The former will be used only for display purposes, whereas the latter may serve for both storage and dispensing. Little, if any, scientific work has been carried out to determine the maximum temperatures which it is safe to carry in these two sections, but we have found that if the display case is held at from 16 to 20 degrees Fahrenheit and the storage box at from 4 to 8 degrees, almost any frozen product will be kept in excellent condition. Obviously, the reason for holding the storage box at a lower temperature than the display section is that the products will be held for longer periods in the former.

The display case must have the maximum of a well-lighted display area and should have the connection currents reasonably well controlled.

The storage and dispensing section may be located either under the display case or in a different part of the store—perhaps against the wall back of the display case. In this storage section maximum availability is the most important consideration, and we have found that drawers serve this purpose admirably.

Obviously, these low temperature units must be efficient from a refrigerating point of view, capable of withstanding the severe operating conditions to which they are subjected, attractive in appearance and reasonable in first cost.

How to Cook Quick-Frozen Foods

One of the chief difficulties in using ordinary cold storage meats, seafoods, and poultry is that it has been necessary to thaw them slowly and completely before cooking. That is because these slow-frozen products contain large ice crystals which, when thawed quickly, ooze out of the flesh and are lost; while if such large crystals are thawed slowly at least a small percentage of the moisture content is re-absorbed by the cell matter, and retained in the cooked material.

Quick-frozen flesh, on the contrary, does not contain large ice crystals, and its texture is entirely normal. Therefore, it need not be thawed before being cooked. In fact, if all the advantages of quick freezing are to be realized, such products should be put on the fire or in the oven while still frozen.

The Future of Quick-Frozen Foods

The quick freezing of packaged perishables is less than four years old, yet the industry is already well established and of no inconsiderable size. Even now the new methods are being commercially applied to many varieties of fish, shellfish, meats, meat products, poultry, fruit and vegetables. Well equipped and manned laboratories are bending every energy to bring to the market still other products of the most diverse nature.

There is much yet to be done—but it is being done swiftly, and with great resources available for both laboratory and field tests. Tremendous possibilities lie ahead, and before long many more of our visions will have become standard practice in both the wholesale consumer and retail food trades.

DISCUSSION

Some of the most valuable material contributed by Mr. Birdseye will be found in the discussion that followed the reading of his paper. He froze some meat with dry ice for his audience, and then answered questions from the floor. These questions touched on some of the points most actively discussed at the present time. He tells where quick freezing has succeeded and where it has failed.

Mr. Nolde: In connection with the experiments conducted in Springfield, Mass., I have a question to ask which, I believe, can be answered very readily. You have made one recommendation, namely, that the display case should be separate from the storage or merchandising case. What has been the result in Springfield of the typical habit of a woman to shop for her particular steak or chop? She sees it in the display case. Doesn't she question whether it is the same in the package as in the case? To me it is a question of education, and eventually the fact that the individual producer can establish a reputation for a branded article will probably finally solve that question. But, as far as I can gather, the merchandising of this frozen product in suitable display form or otherwise is the difficulty that hasn't reached a perfect solution as yet.

Mr. Birdseye: You are perfectly right. It is far from perfect as yet. I should say, in regard to that Springfield test, that it was conducted with extreme care, regardless of expense, and with a minimum of chance of failure. On the other hand, there have been some very remarkable results come from it. In the first place, the sales have not been to a new set of people each week, as might have been expected if the advertising and the publicity and the management had been the all-important thing. Actually, the increase in the number of customers has been comparatively slow, although the increase in sales has been very rapid. The last I heard, 74 per cent were repeat orders. I was in one of the stores myself when two tots, one about six and the other one four, came in, waltzed up to the clerk who was back of the case and simply said, "Mamma wants some of them there frosted pork chops," which, I think, answers the question. The tots' mother had already accepted, in about three weeks' time, the idea of the trustworthiness of a brand.

There have been a lot of other interesting things come out of the Springfield test. One is that the best selling individual item has been frozen spinach—which, I think, was as great a surprise to others as it was to me.

Mr. Gadsden: Did I understand you to say that the packers advocate the thawing of these meats before cooking?

Mr. Birdseye: With quick-frozen products, no; they may be, and really should be, cooked while still hard and frozen. In other words, it makes no difference in the quality of the products whether they are thawed or not thawed; but if they are not thawed before being cooked, we know that they are the same quality that they were when we shipped them.

Mr. Gadsden: I know that in the case of roasts they advocate searing the meat first and then cooking slowly, say ten minutes to a pound longer than the fresh meat.

Mr. Birdseye: I believe that is the case and it does take longer. That same principle applies with practically all of these frozen products. If, for instance, we are cooking chops or steaks at the plant we put them, hard frozen, in close to the flame and sear them rapidly on both sides—giving them, incidentally, a very attractive broiled appearance—and then we either lower them an inch or so or turn down the flame. With an ordinary inch-and-a-half thick steak or chop I should say it took ten minutes longer than would be necessary with the thawed product.

Dr. Pennington: Is there any weeping at all, Mr. Birdseye, when the meat thaws out?

Mr. Birdseye: Yes, there is some, because there is some even in fresh meats. But the leakage, or the weeping, is not substantially greater than with the fresh, unfrozen product. I can illustrate that, perhaps, by the chops or the steaks which we sent out to the A. S. R. E. meeting in Detroit last January. There were 100 steaks. They were shipped from our place on Wednesday, arrived in Detroit on Saturday, and were held at about 20 degrees Fahrenheit in an ice box until Monday, when I got there. That morning they were taken out and put in two very large white enamel pans and placed in an ice box at about 50 degrees Fahrenheit. That evening, about quarter after six, just before it was time to cook them, the chef came up to the meeting room and said he wanted me to come down and see the chops. I went down, and when I tipped the pans of chops up so as to cause the juice to run into one corner—there wasn't any juice! That was remarkable, for it wouldn't have been so even with fresh steaks of the same quality. I think the answer was that they were thawed at a temperature which prevented condensation of moisture on the outside; and probably the slight moisture that developed was evaporated in the mechanical box as fast as it appeared. But there is substantially no leakage in such products.

Dr. Hawkins: I would like to ask, Mr. Birdseye, have results of the work on freezing of fruits and berries been tried out?

Mr. Birdseye: I can answer that question only in skeleton because it is a very broad matter. There is a fundamental difference between all animal products and all vegetable products. Animal products have elastic walled cells, which are not broken by expansion and contraction of their contents during freezing and thawing. They are broken only by the formation of large crystals if those are allowed to form. Plant matter, on the other hand, has cellulose cell walls. Moreover, it very often has very large intercellular spaces filled with moisture. Inevitably when that water freezes, the mere expansion of the water breaks down the cells. I have yet to see anybody's frozen vegetable product, including our own, which didn't show signs of cell damage and leakage and wilting when it thawed. Of course, with products such as peas, asparagus, spinach, carrots and things of that sort, that are to be cooked, the damage to

(Concluded on Page 16, Column 1)

Refrigerated Food in B. A.

APPETIZING foods are displayed to advantage in the dining room of the San Isidro Hotel, in Buenos Aires. The first thing that diners see upon entering the room is a Model PL13 General Electric refrigerator. Glass doors of the large cabinet permit a view of varied delicacies contained therein. Thus the refrigerator performs double service—in its main capacity of preserving foods, and in the secondary use as a means of advertising certain dishes.

DEVELOPMENT

Of Mechanical Refrigeration Is Absorbing Story*

By J. M. Fernald, Sales Manager Commercial Division, Kelvinator Corp.

FOR many years the commercial side of refrigeration has engaged the attention of engineers and all who were concerned in the production and sale of perishable food products. What was being done to solve commercial refrigeration problems did not reach the public. The food manufacturer, the packer and merchant make every effort to achieve better ways to present a better product to the consumer. The consumer buys what is offered for sale and is glad to obtain products in improved form, but does not consider how this improvement was achieved.

So, in the last analysis, the public is the interested party, as it is in all effort for the improvement of things commercial, and of late there has been a very definite change in public interest.

The growth of refrigeration mindedness in the past year has been most remarkable. The awakening on the part of the public, to the importance of refrigeration in the scheme of life has been due to many things.

Overcoming Resistance

No doubt, the extensive advertising and sales promotion activities of the household refrigerator manufacturers has been most influential in bringing this condition about. Add to this the sales activity of the public utilities to take advantage of a most promising load builder, and the public just had to recognize the importance of correct refrigeration.

The whole subject of refrigeration is increasingly interesting to the public, for it comes close to the home. It not only involves health and longevity, but appeals to the people on the side of greater ease in the attainment of refrigeration, greater comfort and luxury.

The gap between commercial and domestic refrigeration decreases as refrigeration mindedness increases. The woman who pays $300.00 for a mechanical refrigerator for her home is not satisfied to purchase her food from a merchant who is not also up-to-date in his refrigeration. Likewise the merchant is very proud of his new refrigerated display unit, from which he sells better products, and his attitude is reflected in the consumer buying from him. So the entire chain becomes a continuous process to refrigerate from source to plate.

Witness the growth and intense activity in the commercial field on the part of the manufacturer of food products; the merchants, large and small, who retail to the people. The spirit of a short time back to "leave well enough alone" has been succeeded by a tendency toward greater efficiency. The merchant realizes that modern refrigeration offers him a definite and efficient method of handling perishable products without loss and with a small investment. It is the shortest cut to increased profits, and they are taking advantage of this benefit every day.

The vapor compression machine is the one commonly used for producing refrigeration today. This type of machine uses ammonia, sulphur dioxide, methyl chloride, ethyl chloride, ether or carbon dioxide as a refrigerant. The main units of the refrigerating system consist of the compressor, the condenser and the cooling unit.

The refrigeration cycle commonly used in the houseehold unit is obtained by vaporizing of the refrigerant in the cooling unit, extracting heat from its surroundings. This vapor being drawn off by the compressor, which compresses and condenses it to liquid form in the condenser, whence it is returned to the cooling unit through an expansion valve regulating its flow. This completes the cycle.

Development in the perfection of mechanical equipment to perform this function has been the constant effort of hundreds of engineers and chemists for years. The definite start to perfect a machine for household use, however, resulted in producing a unit in about 1914. Household refrigeration is really, then, a relatively new industry, whereas commercial refrigeration was well established as an industry long before.

Developing the household machine, using the principles of the larger commercial machine, was the task which a Detroit manufacturer undertook in 1914. This manufacturer had visions of a small mechanical refrigerator for the home, electrically driven and automatically controlled. It was a new idea and there was no clamor for it, and no such thing as refrigeration mindedness on the part of the public.

It took a long time to produce the first domestic machine to a state bordering on commercial perfection, and a lot of patience and money. Then when the machine was perfected came the battle to win public acceptance. It takes a lot of hard work and more money to educate the people in one city alone, especially on something new and different.

Pioneer Work Costly

It takes a huge expenditure of money and effort to educate the entire nation and more than eloquence on behalf of a good new product to get capital invested by merchants to stock and sell this article. This was the problem at the outset.

Through this pioneering battle struggled the first manufacturer of domestic mechanical refrigeration. A less determined industrial captain would have given up the fight. One with less confidence in the product he was producing or with less vision of its future possibilities would probably have left the field. But this manufacturer fought on, and there were lean years.

Up to the year 1924 a total of only 10,000 small mechanical units of all makes had been sold. This total production of ten years would now only serve the public demand for about four days.

Capital was all but exhausted in experimental and development work, which necessarily limited sales and advertising, when extra capital came to the rescue in 1925, confident of the possibilities in this great enterprise.

The small refrigerator had been developed into a perfectly practical and dependable unit that could be built by modern mass production methods.

From then on the business began to grow by leaps and bounds, and sufficient funds were available to increase distribution outlets and back up the sales activities with adequate advertising. All doubt as to the future of the small unit refrigeration industry was dispelled. Success had finally crowned the efforts of its pioneer.

From 1925 to 1930 we have witnessed one of the most remarkable growths attained by any industry in the expansion of the business of the first mechanical household refrigerator manufacturer. Not only has the pioneering company in the industry gone on to great success, but other organizations, realizing the possibilities, started in and there has been tremendous business for all. Six hundred and thirty thousand units were sold in 1929, and undoubtedly upwards of three-quarters of a million units will be sold this year.

Competition in this field has resulted in further progress and new developments at a remarkably rapid rate. The purchaser today can choose from many makes, and each manufacturer is striving for leadership, spending thousands of dollars in advertising to tell the pub-

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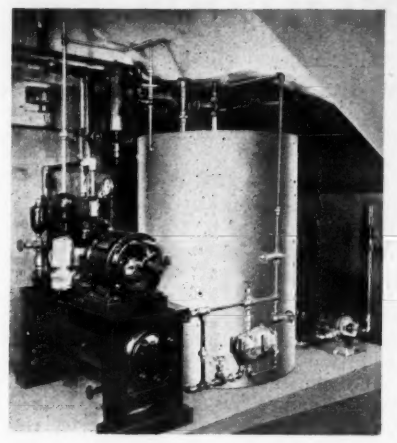
*Paper read at Annual Meeting of the American Institute of Refrigeration, Washington, D. C., May 2, 1930.

DRINKING WATER SYSTEMS

The FRICK *Way*



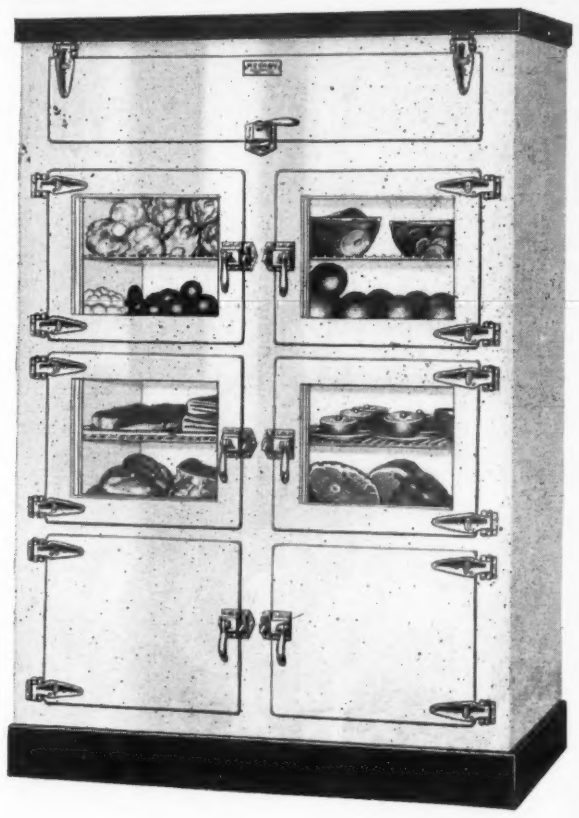
The Drinking Water system illustrated is especially adapted to office, bank and public buildings. Hospitals and industrial plants are also large users.

Refrigeration for this system is provided by a No. 1½ Unit and a pressure tank, with float control, all of which occupies a small space.

Frick Drinking Water System installed in Frick Company's home office

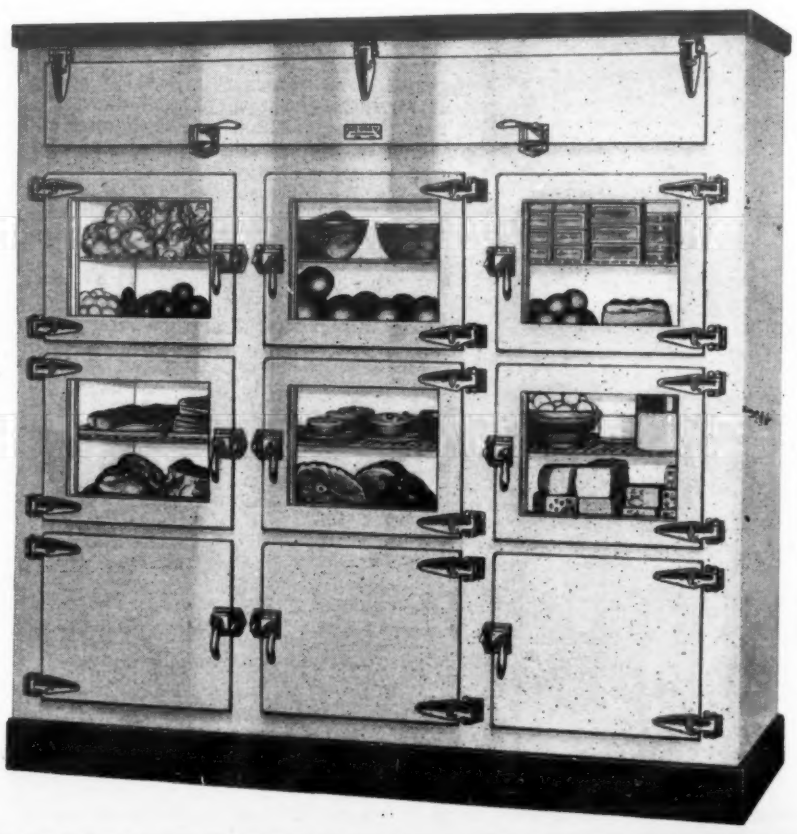
Write for Bulletin and Estimates

Frick Company
WAYNESBORO, PA., U.S.A.
"EXCELLENCE OF MACHINERY SUPERIOR SINCE 1883"



The new McCray Model P425, exclusively for machine refrigeration of any type . . . gleaming white porcelain exterior and interior with handsome black porcelain base and cornice . . . four-inch walls, three inches pure corkboard . . . three thicknesses of glass in display doors . . . nickeled bronze hardware . . . 45 square feet shelf space; cubic capacity 45.62.

McCRAY . . . Presents two new all-porcelain refrigerators for commercial use, with machine refrigeration of any type, assuring efficient, economical operation.



The new McCray Model P424 . . . same specifications as the P425 . . . 69.36 square feet of shelf space; cubic capacity 70.33. McCray quality in every hidden detail, the result of 40 years' experience assures utmost satisfaction in service.

See the new models at nearest salesroom or write for further details . . . McCray Refrigerator Sales Corporation, Dept. 66, Kendallville, Indiana. Salesrooms in All Principal Cities. (See Telephone Directory.)

Copeland at Health Show

MODERN electric refrigeration as a contribution to public health was demonstrated by Copeland at the Health and Educational Exposition held in the Coliseum of Chicago, May 17 to 25.

This event, under the auspices of the Chicago Department of Health, the Chicago Medical Society, the Chicago Dental Society, and the Illinois Federation of Women's Clubs, was widely patronized and attracted more than ordinary interest on the part of those Chicagoans identified with the promotion of health and child welfare.

The Copeland display commanded a full share of attention because of its colorful decorations. The numerous advantages of this particular electric refrigerator were demonstrated by a pretty young woman in costume. It was created under the direction of the Copeland Refrigeration Company of Chicago, direct factory branch managed by H. T. Kessler.

MODERN MILK COOLING

New York State and Cornell University Present Results of Test of Electric Refrigeration

By J. G. Marquardt and A. C. Dahlberg

IN the last three years there has been a tendency for the larger dairy farms to install electric cooling units and insulated tanks, particularly in the large market milk areas. This has been due to the extensive advertising of the newer types of refrigeration units, to the value of insulation to conserve cold, and to the importance of refrigeration in assisting to secure premiums for high-quality milk by prevention of bacterial growth.

As a result, numerous questions have arisen. Are the electric refrigerators dependable? What does it cost to operate them? Is it desirable to spend money for insulating materials? How should the milk be cooled? It was in an endeavor to obtain impartial data on these questions that an electric refrigerator was installed at this Station in April, 1928, to cool the milk produced by the herd of 26 Jersey cows maintained at the Station. This is a report on how the equipment was installed, how it has worked, and, in certain cases, on experiments to determine why the results were secured.

There are several factors to consider in the proper cooling of milk. The cost must not be so excessive as to too greatly increase the cost of milk production. There is need for cooling the milk quickly enough to a temperature sufficiently low to reduce bacterial multiplication to negligible numbers. This temperature should be maintained throughout the time the milk is in the tank. The equipment should be simple, easily regulated, and the whole procedure of milk cooling should require as little labor as possible.

One conclusion of these experiments ought to be stated at the beginning so that the reader will bear it in mind throughout the discussion, namely, that when conditions exist comparable to those described, it is recommended that warm fresh milk of good flavor be placed immediately after milking into a well-insulated water tank at 40° F. without previous cooling or subsequent agitation.

The Insulated Cooling Tank

There was need of a rather complete installation to make it possible to conduct certain experimental tests, hence certain features of the experimental tank are not favored for practical farm use. For example, the surface tubular cooler with an electrically driven pump has been shown by the experiments to be unnecessary. The work will be presented as it was planned in the belief that it might be helpful to others planning on the installation of such a refrigeration unit.

Several essentials were considered in the construction of the tank. There is need of sufficient size to hold the required number of cans and still provide space to contain sufficient water and ice or refrigeration coils. The Station herd produces 500 to 600 pounds of milk per day or six to seven 10-gallon cans. As a matter of fact, the tank, constructed to hold a total of six cans, has been used to cool five cans of milk at one time. If the usual practice of cooling only night's milk can by can as milked is employed, this tank would be ample for six cans per milking, or about 500 pounds of milk. Although the tank would hold eight or nine cans when set tightly together, such crowding is not desirable as can be readily illustrated.

The inside dimensions of the experimental tank are 35 inches wide, by 60 inches long, by 26 inches deep, with a 1½-inch pipe set in a corner to maintain a water level of 20½ inches. This allows a floor area of 17 by 20 inches per can, which is satisfactory for tanks holding 6 to 10 cans, but for smaller sizes the capacity ought to be increased to about 20 by 20 inches of floor area to make room for ice or coils. Tanks ought not be constructed for less than four cans.

The Station tank contains 42,000 cubic inches to the overflow which, at 231 cubic inches per gallon, gives it a capacity of 182 gallons. When the tank is filled with cans there are 2 gallons of ice and water for each gallon of milk.

A calculation shows that with water in the tank at 40° F., warm, fresh milk at 90° will be cooled by the water alone to 57° when six cans are placed in the tank, and to 47° when three cans are used. Temperatures below these must be secured, however, and in electric cooling this must be done chiefly by ice frozen in the tank around the coils, for the compressor itself is too small to give sufficient refrigeration to cool the milk as rapidly as is necessary. Hence, refrigeration must be stored as ice when the machine is operating between milkings. Allowing 1 B. t. u. (British thermal unit) to cool 1 pound of milk or water 1° F., and 144 B. t. u. to melt 1 pound of ice into water at 32° F., it can be calculated that 182 pounds of ice would be required to complete the cooling when six cans of milk are set in the tank. This figure is only approximate, as the machine would be working as the milk was cooling, but it indicates the need for the refrigerator freezing a large block of ice in the tank, especially during the summer months.

The water-tight inside lining for the tank consists of a tank made of 14-gauge galvanized iron with a 1½-flanged outlet in the bottom so attached that the overflow pipe can be screwed into it. On the end there is one ½-inch hole near the top and one near the bottom for attaching the outlet and inlet of a surface tubular cooler. For ordinary purposes this attachment would not be needed, as will be explained later. The entire tank is painted with asphalt paint. The use of concrete instead of iron for inner lining of the tank was considered. On account of the freezing of ice to the wall of the tank, engineers counselled against concrete; but in the last year it has been demonstrated that concrete would have been satisfactory. The iron tank has the advantage, however, of not adding 3 to 4 inches to the width of the wall of the tank, as would concrete. The iron, after nearly two years' service, shows but little rust, and this spring the tank will be cleaned out, dried, and repainted. Apparently, it should last at least 10 or 15 years.

The outside of the tank is made of 4 inches of good concrete. It should be stated that the tank could have been constructed a little cheaper if the inside had also been finished with concrete instead of iron. However, the wall would have been 11 inches thick instead of 7 if this substitution had been made, a factor to consider, as cans must be lifted over the wall.

Insulation Important

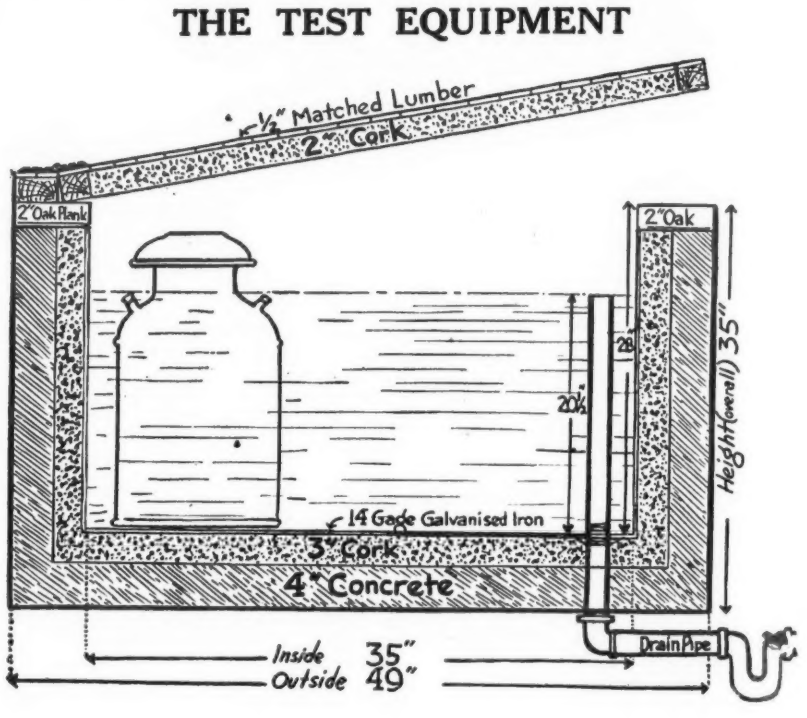
There are several important points to consider in the insulation of the cooling tank. Compressed corkboard is almost universally used in dairy refrigerators and is now recommended for cooling tanks on the farm. While cork has been used in these experiments, it is probable that some other materials are more convenient for dairymen to purchase for making tanks on the farm. assumed that 3 inches were the best thickness of cork to use, but rather that thorough insulation was profitable.

Insulation value generally depends upon the presence of innumerable air cells which conduct heat slowly due to no convection currents and low specific heat. If the insulation becomes wet its value is largely destroyed on account of the high specific heat of water. The cork in the experimental tank was made water tight by hot asphalt. The cork was purchased in slabs of 2- and 1-inch thickness so that joints could be lapped to prevent air circulation. The asphalt was heated in a broad pan large enough so that the slabs of cork could be dipped one side at a time. If this is impossible, the hot asphalt should be painted on the cork. Each piece of cork ought to be thoroughly coated on all sides and edges, and when the cork is placed in position all crevices should be filled with hot asphalt. The cork coated with asphalt really ought to be a water-tight job so that there is no danger of wetting. The underside of the 2-inch plank which covered the concrete and cork and which extended around the top of the tank was coated with roofing cement to prevent any water from working back into the insulation.

The drawing directly below illustrates a cross section of the tank. More details on the use of cement, and the details of making cement walls, tanks, etc., can be secured from the manufacturers of cement; from the manufacturers of electric refrigerators for farm use; from the Department of Rural Engineering at Cornell University, Ithaca, N. Y.; from the United States Department of Agriculture at Washington, and from others.

The refrigeration was supplied by a Frigidaire air-cooled compressor operated by a ½ horsepower motor and

THE TEST EQUIPMENT



The figures below give the heat losses in B. t. u. per hour, per square foot of different materials, per 1° F. gradient in temperature, and per 1 inch of thickness:

Material	Heat loss in B. T. U. per hour*
Corkboard (average density)	0.30
Celotex	0.34
Insulate	0.34
Flaxlinum	0.31
Fibrofelt	0.32
White pine (dry)	0.78
Oak (dry)	1.02
Brick	3.0 to 6.0
Concrete	6.0 to 9.0

*Figures taken from report by U. S. Bureau of Standards.

These materials are sold in varying thicknesses, but for these tests they were all built an inch thick. It will be noted that several common insulating boards are approximately equal to cork, while concrete is only 1/25 as efficient.

This data on insulation values were secured under ideal test conditions and would not hold exactly true under practical conditions. There is ground underneath and on part of the sides of most tanks. Consequently, the heat losses through a tank insulated with 3 inches of cork and through a non-insulated tank with 4-inch concrete walls were determined. The trial was made on several days, but that of July 25, 1928, was typical. The air temperature varied from 72° to 80° F. The water in both tanks was 42° at the start and the test lasted for 24 hours. In the non-insulated tank, 288 pounds of ice were placed and 40 pounds were left after 24 hours. The water warmed to 43°, making a total refrigeration loss of 258 pounds of ice. In the insulated tank the original 94 pounds of ice were reduced to 22 and the water in the tank was lowered to 39.5°, thus making a loss equivalent to 46 pounds of ice when the water temperature was considered. The 3 inches of cork saved 212 pounds of ice in one day, which, at $5.00 per ton, was worth 53 cents. If we assume similar losses for five months per year, the insulation saved $80.00, or three times its cost in one year. It should not be equipped with one cooling drum. The principles of mechanical refrigeration are simple. The heat in the milk is taken up by the water which surrounds the cans and is imparted to the refrigerating gas in the drum which is immersed in the water. The gas containing this heat and which actually is still much colder than the water is pumped out of the tank through the compressor. The gas is compressed into a smaller volume and the heat which it contained now being in so small a space makes the gas so hot that it can be air cooled. The gas used in most small machines is sulfur dioxide. The cooled compressed gas now flows as a liquid to the expansion drum or cylinder in the water tank, where the pressure is released and the gas vaporizes and expands. Both these changes require heat so that the gas becomes cold and is ready again to take heat from the cooling tank.

Reserve Refrigeration

One point which is generally overlooked in the operation of these refrigerators is that the machines are too small to cool milk with sufficient rapidity by running as needed. In other words, it is essential with this machine, and it is typical of all others now on the market, to store refrigeration in the tank to be used as a rapid supply of refrigeration. This is done by freezing ice around the drum or coils by the automatic operation of the machine between milkings. The ice cake must be so shaped that it will readily melt when warm milk is placed in the tank. This means that the ice must not be nearly cubical in shape. Unfortunately, many expansion drums are too nearly cubical.

In the case of the installation at the Experiment Station, the machine gave ample capacity, except in the summer months, when the ice would not melt rapidly enough. This condition could be remedied in several ways. In the Station tank a small brine tank (Fig. 2, A) was constructed of 20-gauge iron which was wide enough to enclose the coils, deep enough to keep above the water level, and long enough to extend

(Continued on Opposite Page)

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This Modern Sales Unit will increase sales in any Store!

40° here

20° here

Percival DUO-TEMP

Provides Freezing Cold and Moderate Cold in One Counter

Note the Convenient Door Arrangement

The freezing end doors in the top display section drop down, leaving a clean, convenient place to lay down foods temporarily taken from the case. Notice, too, the thickness of the insulation, a sure guarantee of low cost cooling. The convenient holders for paper and twine, the shelf for scales—everything to give the kind of quick service people like.

These Features Help to Make Quick Sales for You

4" cork board in freezer end.
3" cork board in 40° end.
Top display section of freezer end equipped with bracket type, ⅞" offset double gasketed, bottom hinged doors.
Top display section in 40-degree end equipped with doors for quick service, sliding on monel metal track.
Bottom doors on both ends side hinged, and double gasketed.
Front on both ends equipped with three thicknesses clear plate glass.
Porcelain covered, trimmed with either Monel or Allegheny stainless steel.
Made for Mechanical Refrigeration. Any make or type.

This new Percival case is a real achievement—built to meet the requirements of the modern merchant. One side of the Duo-Temp is kept at 20 degrees for the new quick-frozen meats and fruits. The other side maintains a temperature of 40 degrees for milk, cold meats and other food products that must not be frozen. A vertical, cork insulated and glass partition divides the case in the middle — and BOTH sides are cooled by one refrigerating unit. Dealers who do not handle "quick-frozen" products *now* can have both sides coiled for the same temperature and later, when space is needed for "quick-frozen" foods, put in additional coils for the cold side.

No other counter on the market offers this advantage, and few offer the convenient arrangements that speed up service, and the correct insulation and design of this counter.

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Firm name .....
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What other specialty lines are you now handling?

MILK COOLING

(*Continued from Opposite Page*)

nearly across the tank. The brine tank, after installation, was filled with brine and the ice frozen around the tank. This gave plenty of exposed surface to handle any reasonable amount of refrigeration and gave complete satisfaction in routine milk cooling. The brine, with a specific gravity 1.2, was made by placing 30 pounds of calcium chloride in a 10-gallon can and filling with water. About ¼ pound of air-slaked lime was added to neutralize the brine so that the corrosion of the tank would be held to a minimum. Experiments demonstrated the value of this brine tank when an expansion drum is used.

It should be possible to construct a more satisfactory design of expansion drum. For example, if the present type could be lengthened about 50 per cent, the brine tank would be superfluous. The ideal expansion design is the expansion coil which encircles the entire tank, thereby giving the maximum exposed surface in the best location. In the future such improved types will be made available through engineering research.

The installation of the insulated tank could be lower in the floor were it not for the necessity of slanting the return pipe away from the expansion drum to drain out the oil. In this experimental tank the top is about 16 inches off the floor, which makes it necessary to lift the can a few inches too high. Some electric refrigerators now have overcome this difficulty.

Cooling Milk in Cans

There are ample data in the literature to demonstrate that milk cools very slowly in a 10-gallon can immersed in ice water, that it cools much more rapidly when stirred, and that for best cooling the milk ought to be tubular cooled before placing the can of milk in the tank of water. There can be no doubt whatever concerning the absolute necessity of tubular cooling of milk to be set in a cold air room because air cools milk so slowly. However, the necessity of rapid tubular cooling of fresh milk before placing it in ice water may be entirely different when a well-insulated tank of ample capacity is used.

Milk freshly drawn from the udder of the cow ought not to require the rapid cooling necessary to maintain a low bacterial count such as is known to be the case for aged milk. That bacteria fail to develop and multiply in most samples of freshly drawn milk has been well established, although there may be some doubt concerning the proper explanation of this phenomenon. At the beginning of this century freshly drawn milk was found to have a germicidal action, but recently there has developed a belief that the effect is partly due to the changed environment conditions of the bacteria or to the lag in bacterial multiplication preceding growth.

Be that as it may, Hunziker, at Cornell University, in 1901, extended the study on this subject and found that bacteria decreased in freshly drawn milk, particularly when stored at 70° F. A few years later Stocking, also at Cornell University, verified the results, but noted an exceptional sample in which the bacteria had increased in three hours at 70° F. He cautioned that "immediate cooling" is necessary due to irregularities in the milk. It should be stated that this objection is less valid when a can of milk is cooled because it is the milk of several cows, most of which would have the germicidal action. In 1922, Macy, at Minnesota, found under practical farm conditions that the count of uncooled milk scarcely changed in an hour, but after two hours some samples began to give higher counts.

In this investigation the milk was cooled in three ways, namely, (1) the can of freshly drawn milk was set into the tank of water without previous cooling, the lid was tightly put in place, and the milk was not agitated in any way; (2) the milk was treated as in (1), except that it was stirred after one- and two-hour periods; and (3) the milk was cooled by a surface tubular cooler to the required temperature before placing in the tank of water. Mention should be made of the fact that the stirring rod was washed and rinsed with hot water after each usage and was steamed in a tin cabinet for 10 to 15 minutes once a day. The tubular cooler was washed with a Diversol sterilizing solution, rinsed with hot water, and then with a lukewarm Diversol solution.

After the cans were filled with milk at the barn, the entire amount was mixed together and divided into three cans which were sampled for bacterial counts and cooled according to the three described methods. After 24 hours, samples were again taken for bacterial counts and the milk was often examined for flavor and odor. Only a limited number of tests were made with tubular-cooled milk due to a shortage of supply and the desirability of complete data on the other cooling methods. In these studies the tank was held at various temperatures as shown in Table 1. The milk with high bacterial counts was secured by complete disregard of sterilization of the milking machines.

The data for tubular-cooled milk are incomplete, but it is well known that approximately 50° F. is the critical temperature above which the bacterial count of milk increases markedly in 24 hours. In some instances not given in the table the passage of milk over the cooler gave noticeable increases in count.

The results of real significance are that the bacterial content of can-cooled milk did not increase in 24 hours when the water in the tank was below 42° F., and that stirring was of no value. The large, well-insulated tank with plenty of available ice enabled this easy method of cooling to give excellent results. There was no increase in bacterial count of milk placed in water below 40° F., and if these results are indicative of what might be generally expected, then the highest quality of milk can be maintained by can cooling without stirring. As a matter of fact, equally good results were secured below 50° F., but we favor 40° or less to produce grade A milk of lowest bacterial count because of the added safety against mishaps. For ordinary market milk for pasteurization the results show that a temperature under 50° for the water tank would be ample. However, in an insulated tank it is almost impossible to have ice in the tank continually without securing colder temperatures. Even in non-insulated tanks a temperature of 50° can be maintained if a tank of sufficient size is supplied with ice.

Electric Refrigeration

In view of the data which have demonstrated that 3 inches of cork in a water-cooling tank paid for itself and saved about $80.00 worth of ice at $5.00 per ton in one year, it seems unbelievable that the value of insulation for use on the farm has not previously been given more attention. It has remained for the manufacturers of small refrigeration units for use on the dairy farm to promote the value of insulation. They have been forced to do this because their machines are small, because the refrigeration must be utilized to best advantage, and because it seems to be human nature to be willing to waste ice but to conserve electricity. A small increase in meter readings has more effect in bringing about economies than the wasteful use of ice.

Our data clearly demonstrate that insulation not only pays for itself the first summer, but that it is essential for maintaining uniformly cold temperatures. There is little information to show what ice will do in cooling milk in insulated tanks. Such studies are now being conducted and a report on this subject will be made in another year. Possibilities along this line are indicated by the fact that one 70-pound cake of ice reduced the temperature of three-fourths of a ton of water at 42° F. over a 24-hour period in the month of July to 39° F.

Careful Record Kept

When the electric refrigerator was installed, data were collected on every conceivable subject which might be of interest in studying the value of the machine. Records were kept of the minimum and maximum temperatures of the air, the initial and final temperature of the milk, the temperature of the water in the tank, the electricity used, etc. Some of these data are given in the table at the top of this page, and the amount of ice that would have been used in place of electricity has been calculated with approximate accuracy.

The figures show that on a yearly basis 1.08 kilowatt hours of electricity were employed to cool 100 pounds of milk, a result based on 13 months' operation. The cost depends on the electric rate in any locality and would be 5.4 cents at the usual rate of 5 cents per kilowatt hour. By calculation, it was shown that 29 pounds of ice would have been needed to do the same task which, at $5.00 per ton, would be 5.8 cents. These costs are but a part of the total, for with the electric refrigerator there is the original investment, depreciation, and an annual service which we believe ought to be regular.

With ice there is the enormous shrinkage to consider, the original investment in the ice house and its lower depreciation, and the disagreeable, wet task of handling ice in the summer when time on the farm is at a premium. The electric refrigerator requires a simple temperature adjustment in the spring and fall.

It is somewhat difficult to give comparisons between the cost of cooling milk by electricity and by ice. Many factors which need to be considered have already been discussed. It may not be out of line to assume that the cost of ice on the farm is approximately $5.00 per ton. In view of the fact that ice shrinkage usually amounts to 50 per cent of the original total, this would mean that ice must be put up at a cost not exceeding $3.00 per ton. Most of the data collected on this subject indicate that this is a reasonable charge. The information which has been collected in the course of this study indicates that the cost of the ice would pay for the electricity to operate a mechanical refrigerator. The original cost of the electric unit would, of course, be in addition to this. One must realize that there are certain advantages of the electric refrigerator, such as the maintenance of a more uniform and lower temperature and its greater convenience due to the elimination of the handling of ice in the summer time, which partially counteract the greater expense of the electric cooler.

One of the unknown costs in the electric refrigerator is depreciation. There is no accurate way of estimating this item, which can be determined only through years of actual service of the machines. This year the International Association of Ice Cream Manufacturers published depreciation rates on ice cream machinery based upon actual experience, and since electric refrigerators have been used for cooling ice cream for about five years, the Association has some basis for estimating cost. Their schedule of depreciation is 20 per cent on the iceless cabinet, which would mean that the machines should give about five years of service. This depreciation rate is excessive for farm dairy units because of the great difference in the temperature of an ice cream cabinet and a milk cooling tank. It is probably more reasonable to assume that mechanical refrigerators ought to last for periods of 10 to 15 years on the farm.

The attention which the electric refrigerator requires is meager but essential. They should be installed where there will be a minimum of dampness. This precaution will prevent rusting and corrosion of the machine. The electric

(*Concluded on Page 9, Column 1*)

Comparison of Cooling Mediums

Month	Number of 10-Gallon Cans, Daily	Temperature of Milk		Electricity in Kilowatt Hours		Ice Equivalent in Pounds†	
		Initial	Final*	Total	Per cwt. of milk	Total	Per cwt. of milk
1928							
June	5.8	60	39	138	0.93	3,450	23
July	7.3	64	41	265	1.38	5,141	26
August	8.1	65	41	233	1.09	5,673	26
September	6.8	65	39	321	1.85	3,669	21
October	5.3	60	39	200	1.42	2,717	19
November	4.7	59	38	139	0.88	2,788	19
December	5.2	70	38	105	0.69	3,697	26
1929							
January	5.7	72	38	84	0.56	4,179	27
February	6.5	74	38	94	0.61	3,746	24
March	6.7	74	38	123	0.70	5,012	28
April	6.2	75	40	143	0.90	4,390	28
May	6.0	80	42	252	1.58	6,226	39
June	6.2	83	44	212	1.34	6,202	39
July	7.0	84	43	192	1.04	7,173	39
Average for all months (228,778 pounds total milk)				178	1.08	4,744	29

*This temperature is given as 5° F. above the water temperature because part of the milk each day was tubular cooled only and never attained the coldest temperature.

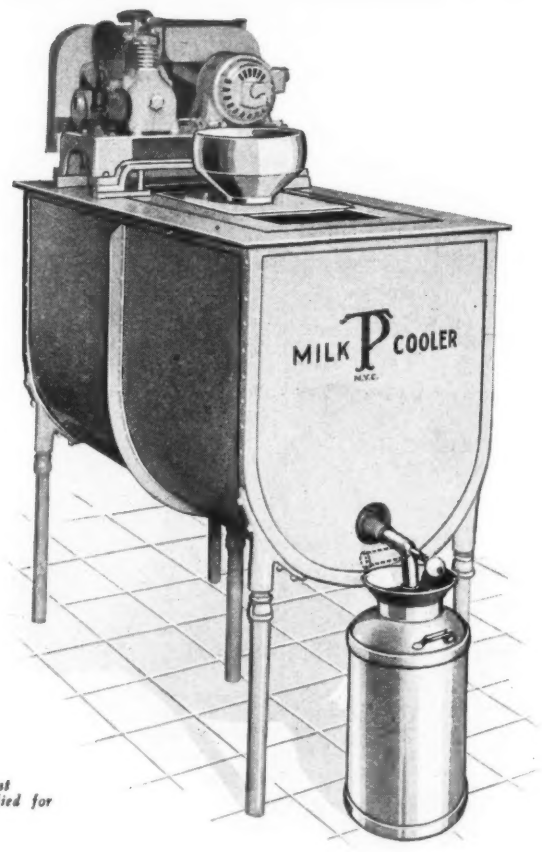
†Approximate daily loss of ice for May, June, July, and August was 75 pounds; for January, February, March, April, September, October, November, and December, 25 pounds daily.

Table 1.—Influence of Cooling Methods on the Bacterial Content of Milk After 24 Hours' Storage*

Cooling Method	Water Held in Tank At 35°–40° F.			Water Held in Tank At 45°–50° F.		
	Low count	High count	40°–45 °F.	Low count	High count	55°–60° F.
Original	11,700	966,000	20,800	15,700	1,133,000	10,000
Tubular-cooled	—	—	18,000	—	—	—
Can-cooled, not stirred	11,900	1,000,000	22,000	10,700†	1,370,000	67,000
Can-cooled, stirred	12,700	1,033,000	25,000	17,000	1,430,000	86,400

*Figures represent plate counts per cc according to standard methods. First two columns based on 17 lots of milk, third column on 13 lots, and other columns on 9 lots each plated in duplicate.

†Due to one exceptionally low result, otherwise these counts would be about 16,000.



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A completely sanitary device

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The P-T Milk Cooler, result of three years' development, offers greater profits to the electric refrigeration dealer because it gives superior results to the milk producer. This completely new type of milk cooling unit incorporates principles understood and accepted by milk plant operators for generations and made available for the first time to the average dairy farmer. Read the high points of construction and operation described below and write for further details.

Description of Unit: Tank is of flat-end, round bottom design, with three inches of sealed-in insulation, outside metal lining, the whole mounted in heavy angle iron frame. Outside dimensions 65" long, 30" wide, 36" deep.

Milk tank is mounted inside brine tank, allowing free space on all sides and is connected to outside by a specially designed sanitary valve. Milk tank dimensions are 44" long, 9" wide, 31" deep, and has a holding capacity of 50 gallons. Rounded bottom and corners make cleaning easy (with lime or chlorine water).

The main "brine" tank cover is sloping and allows 3½" space between cover edge and edge of milk tank. In this space is set welded angle iron frame with supporting legs at bottom for evaporating coil.

Materials of Construction: Super-Metal sheet (a zinc-copper-impregnated steel) guaranteed to outlast ordinary sheets and rust controlling to a high degree is used in brine tank, outside linings and covers. Milk tank is heavy copper, tinned both sides with double lock-seam joints. The angle iron frame, supporting legs and bottom leg band are formed, assembled by electric weld and hot galvanized all over.

Method of Operation: *No previous aeration or agitation is necessary.* The action of the milk falling into the tank through an ordinary strainer with the compressor fan removing the vapors from the surface of the fluid serves to aerate the milk in a very satisfactory manner. Each pail of milk poured into the tank operates to agitate and cause necessary movement in the rest of the body of milk. Heat transfer is quick, and based on a pail of milk poured into the unit every 4 or 5 minutes the resultant temperature at end of milking is appreciably less than 50 degrees. Morning temperature of milk held in cooler overnight will be about 34 or 35 degrees. Power consumption to secure these results averages less than 1.5 kilowatt hours per hundred pounds of milk handled. Capacity is up to 850 pounds (10 cans) per 24 hours.

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Milk

READERS of this publication have a delightfully frank way of telling us just what they want. Their faith in our power to provide them with the information desired is about the highest compliment that they could pay, and as an evidence of our appreciation, we try our best to do as we are asked Most of the requests are of the "more" variety, which at least is an indication that we are on the right track. "I should like to see more about this," writes a reader from the East, and in the same mail is a request from the West for "more about that."

These "more" letters can be divided roughly into two classes. First is the man who is so enthusiastic about the particular refrigerator he is selling that he cannot read enough about it. "More about my own family" is his plea; he isn't especially interested in what the others are doing.

Then there is the reader who wants to increase his store of information about some particular type of equipment. In this class, and it is a big one, the men who seek "more" information about milk coolers have been making themselves heard of late. Every few days a letter comes in from someone who thinks that we should print "more about milk coolers."

Other indications point to a growing interest in milk coolers. Power companies that are extending their service through rural communities are finding that it doesn't take so very much time and trouble to persuade the farmer that the job of cutting ice in winter is cold and precarious, and that the job of handling it in summer is sloppy and inconvenient, and furthermore, comes just at a time when there are demands for every minute of his time. As for an electric milk cooler, running it isn't a job at all. It takes only a second to turn it on and off, and it has the merit of being dependable.

In response to all these requests for "more about milk coolers," this issue of the Refrigerated Food Section contains considerable information on that subject. Those interested in milk cooling will find on pages 6-7-9 a review of the subject recently issued by the State of New York and Cornell University. It covers the subject with unusual thoroughness, giving the results obtained by a series of experiments made with a specially constructed electrically operated cooler.

It makes comparisons of costs and of efficiency between electrically operated and ice-cooled units, and is fair to both. It discusses the merits and defects of both types in an impartial manner. It is the sort of document that a great state and a great university, both representing the public, should publish.

The response to the demand for "more about milk cooling" will not end with the printing of this one article. Milk cooling will be discussed frequently in future issues of the Refrigerated Food Section. It is a subject of constantly growing importance to those interested in electrical development and electrical appliances—a subject that carries with it an especial appeal because pure milk means so much to the nation as a whole, and particularly to the little ones whose health and strength we so jealously guard.

* * *

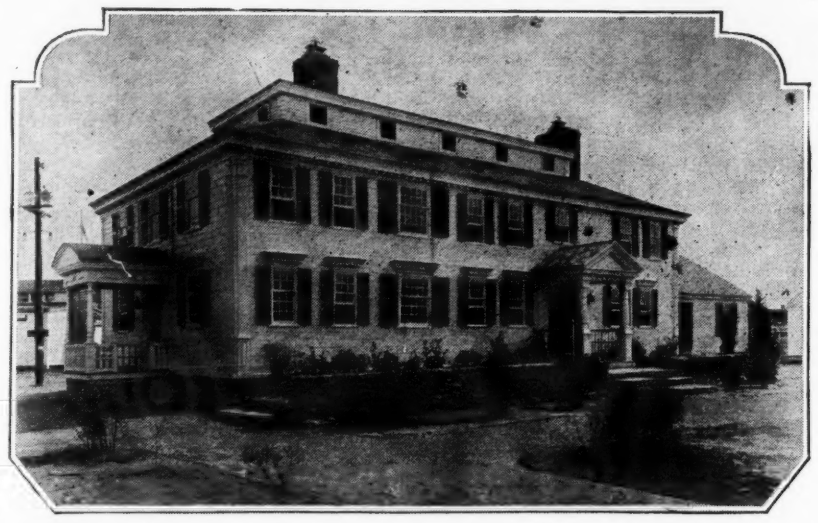
Water

WITH the advent of the summer months, the proper and healthful cooling of water also becomes a topic of increasing interest. There is general agreement among physicians that water properly cooled—and that means neither too warm nor too cold—promotes health and efficiency. Workers in offices and factories are entitled to drinking water at a proper temperature, and the employer who provides it is generally rewarded by an increased output.

Electrically refrigerated water coolers of various types are being made and marketed by many of the leading manufacturers of refrigeration equipment. Some manufacturers are specializing in this field. Efficient equipment is being made and sold at fair prices, and the market seems almost limitless.

Big office buildings and factories are setting the example in the purchase of water cooling equipment, and the smaller business units are beginning to fall in line. It is a profitable field that holds great promise, and right now, when the warm days are beginning to make themselves unpleasant, is the time to sell water coolers.

Colonial



The Old Potter Mansion Where Frosted Foods Were Demonstrated to a Large Group of Women from Various Parts of New England

(Concluded from Page 1, Column 5)

old, taken from their original locations and rebuilt on the exposition grounds.

Most imposing of this group is the old Potter mansion from the ancient settlement of West Brookfield, Mass. In this building American Home Makers, Inc., has its offices and year-round headquarters for gatherings. Here the organization brought together, on Better Homes Week, a large group of women from various parts of New England to hear about the new methods of packing and merchandising foods. They saw a meal prepared of frosted foods and heard a lecture, with motion pictures, on the subject. The women were very much interested in the new development and before departing for their homes, many of them purchased Birdseye foods to take along.

A similar spontaneous element promises to attend the expansion of sales of the product in this and other fields. The addition of Snyder's Market and the James Van Dyk stores to the Birdseye list here is said to have been made at the earnest request of the proprietors of these stores. These steps were significant. Snyder's Market has retailed the highest class of fresh meats and the desire to add Birdseye meats was therefore a distinct tribute to their quality. The addition of the Van Dyk stores was of special interest because the compact cabinets used by General Foods fit into the small Van Dyk stores conveniently, forming an important addition without necessitating an increase of space. Being specialty food stores, the Van Dyk units hitherto have carried no fresh meats expect chickens and pork in season. The Birdseye line is said to have appealed to the head of this chain system as a strategic means of making an addition that would please the customers and increase the sales volume. Although one of the Van Dyk stores is located just across the street from a large Thrift Store, where the Birdseye foods are sold, the followings of the two stores are so different that the departure has made no notable difference in the Thrift Store sales. For the Van Dyk stores, as well as Snyder's Market, the addition has proved decidedly popular.

Mail orders from various parts of the country are received, calling for shipments of the Birdseye foods. A representative order from a consumer in New York City, received at one of the stores a few days ago, carried a list of assorted items, which were promptly shipped out.

An officer of a large manufacturing company here, in a line that is allied to food manufactures, told the correspondent of ELECTRIC REFRIGERATION NEWS that in his opinion the time was coming when fresh meats would be sold in no other way than by the frozen process. "You and I may not be obliged to get our meats that way," he said, "but our children will, it is safe to predict."

net. In general attempts are not made to obtain a temperature much lower than 20 degrees Fahrenheit for the quick-frozen meats in these stores.

In order to display the principal items in this line, Swift & Co. at the Lyman Street warehouse recently installed a Hussman cabinet with a Kelvinator compressor. In this case an assortment of beef steaks, beef and lamb roasts, lamb and pork chops, chickens and other items, mostly encased in cellophane wrappers, are kept. Retailers visiting the place can see the items at a glance, and are more disposed to include some of them in placing their orders.

Retailers buy the frozen meats on the same basis that they buy ordinary meat, taking such quantities and varieties as they desire. Apparently no special efforts have been made to push this line, and the gradual growth in sales has come about largely in a spontaneous way. The stores handling this class of products are mostly community stores outside the business areas of the city, and do not include any large downtown market. It is the view of the local branch manager, Andrew J. Blodgett, Jr., that there is a large future field for this department, and that the moderate gains thus far in evidence represent the start in an important movement.

SWIFT & CO.

Finds Market in Springfield

Springfield, Mass.—Swift & Co., from its warehouse at 130 Lyman Street, is selling its quick-frozen meats to approximately 25 small retail grocers in this city and the immediate suburbs. These are chiefly establishments that did not previously carry meats, other than the cured varieties, except for occasional offerings of pork or poultry. Few of them carry anything like the full list of 60 items embraced by the Swift line, and some of them carry only a few. Most of these stores keep the quick-frozen meats in ice cream cabinets, and the fact that these do not admit of the display of the goods stands in the way of a rapid increase of sales. Considerable increase is reported for the last two months, however, and it is believed that sales of the Swift line have been helped along by the advertising given to the Birdseye products.

One dealer handling the Swift quick-frozen meats—A. H. Cole, of Ludlow—has installed a General Electric outfit consisting of a No. 4 unit and D-13 cabi-

GEORGIA

(Concluded from Page 1, Column 3)

ing out a new process devised by C. T. Comer, of the Crystal Carbonic Laboratory, which freezes the fruits before they are packed in the syrup. This plan would seem to have an advantage in the fact that the fruits can be frozen within five minutes after leaving the peeler and slicer, which would, of course, freeze them at a time when their flavor was at its best.

The marketing part of this season's experiments has been arranged by Director Stuckey, in co-operation with Kamper's Market, in Atlanta, one of the biggest retail provision markets in Atlanta, and a retail outlet in Griffin, only a couple of miles from the Experiment Station. The quick-frozen fruits will be sold at attractive prices; there will be no attempt made to show a profit, and accurate records of sales and purchasers will be kept. Mr. Stuckey expects that the marketing of the frozen products in this manner will provide an excellent test of whether or not the people of Georgia will buy quick-frozen fruits. In its capacity as a state institution, the Experiment Station must, so far as possible, meet the needs of the people of the state, and this sales test will furnish an index to the popular interest in quick freezing.

In its freezing work the Experiment Station has had the co-operation without charge of the Georgia Central Railroad, the Pomona Products Canning Co., and the Crystal Carbonic Laboratory.

EXPANSION

Atlanta, Ga.—Modifications in the plans of W. R. Tucker for the quick-freezing of Georgia peaches this summer has brought the Tom Huston, Inc., organization of Columbus, Ga., into the picture. Mr. Huston, whose activities in the development of southern agricultural products, especially peanuts, is well known, is greatly interested in quick freezing, and plans are being made to freeze other products such as cherries, citrus fruits, shrimp and fruit juices. The Quick Freezing Corporation of New York is providing the freezing equipment.

Refrigeration for the Club

INSTALLATION of Jewett refrigerators has just been completed in the new $2,500,000 Cleveland Club building. This equipment is planned to take care of an estimated membership of three thousand and attendant banquets, parties and other functions.

To facilitate service, the refrigerators are so grouped that a separate refrigerator will handle the products of the particular department in the kitchen where the refrigerator is located.

A refrigerator is provided for the store room in the main kitchen to store meats and poultry at the temperature of 33 degrees. A compartment of the same refrigerator is provided for storing game caught by the members. The temperature here is regulated to 22 degrees. Butter, eggs and milk are stored in another compartment, which is kept at 42 degrees. Fruits and vegetables are stored at 38 degrees.

In the main kitchen, a refrigerator cabinet with sections and drawers is used for storing steaks, chops and other meats for individual service. Adjoining this is the Garde Manger refrigerator with shelves and drawers for holding fruit, lettuce, celery and other materials used in salad preparation. A separate section is devoted to oyster storage, where these delicacies may be kept at just the right temperature and without contamination from other foods.

A Garde Manger counter with a number of refrigerator sections, a bin for crushed ice, and a built-in sink and oyster bar will speed the serving of cold dishes.

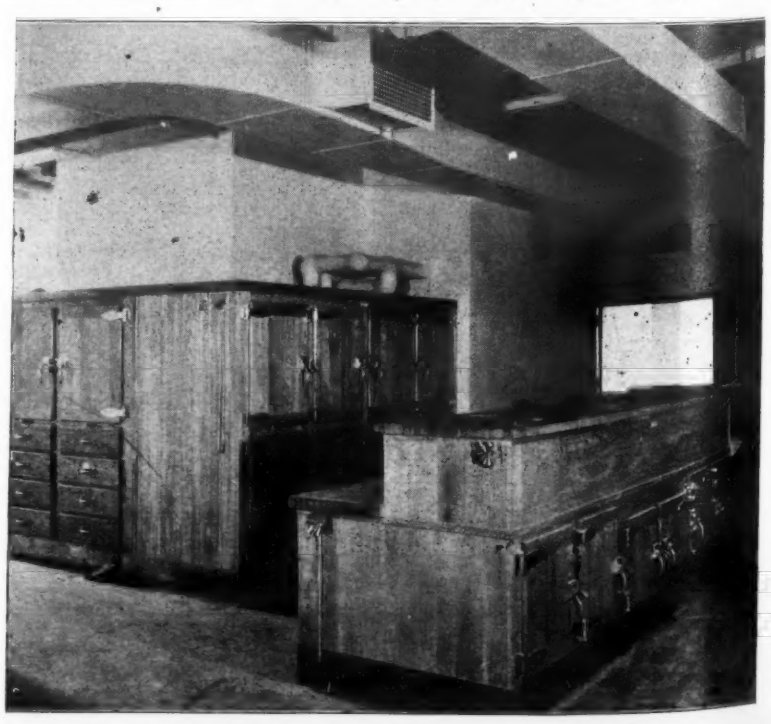
The second cook is provided with his own refrigerator. The baker is also provided with a refrigerator for storing dough.

The refrigeration equipment will also take care of the storage of garbage. The garbage will be frozen until it is ready to be disposed, certainly a new and sanitary method of taking care of this item.

Ice will be plentiful for kitchen and club use. The ice storage refrigerator is designed to hold two tons of ice in reserve.

The refrigerators are completely fitted with locking system, each unit separately keyed, and the entire group on a master key system. This allows responsibility to be placed on those actually using the separate refrigerators and prevents wastage and unnecessary loss of foods.

Two 10-ton compressor units have been installed by the American Carbonic Machinery Company of Wisconsin Rapids, Wis., to carry the refrigeration load.



Compact Installation in the Main Kitchen

MILK COOLING

(Concluded from Page 7, Column 5)

motor requires oiling twice a year, while the compressor is automatically oiled. Although manufacturers of electric refrigerators make no mention of service, nevertheless, it seems desirable that the equipment should be examined once a year by the local representative, who should notice things which needed attention to preserve the life of the machine. He could also re-charge the outfit with refrigerating gas in case of leaks.

It is necessary for the dairyman to regulate the temperature of the machine twice each year. In the spring the regulator must be changed to make the machine operate for a longer period of time, and in the fall the regulation must be reversed. Probably the best way of determining the proper regulation of the machine is to have a thermometer hanging in the water in the tank. The regulator should be so adjusted that the temperature will be below 40° F. The tests with the experimental tank have shown that the temperature of the water in the tank is constant within 2° F., irrespective of its location. In other words, there is no necessity for agitating water in the cooling tank, and it makes little difference where the thermometer is hung if the tank is properly insulated.

In tank cooling with ice, the water level is held at the overflow by the constant addition of ice. No such additions to the volume of water are regularly made with electric refrigeration. Therefore, it is necessary to watch the water level and to add enough water to keep the level near the top of the overflow pipe.

The cost of the electric unit is sufficiently great to prohibit its use on very small dairy farms. It is probable that the four-can tank is the smallest size that can be economically used. In this connection mention should be made of the fact that costs of cooling milk by ice also become excessive in the case of the very small dairy farms.

Mention has been made of the fact that most of the cooling that is done by the electric refrigerator is actually done by the ice which is frozen on the cooling coils, drum, or brine tank. It is essential that ice should be stored in the tank in large amounts during the summer months, but the amount of ice required during the winter months need not be great. It is self-evident that the operation of the mechanical compressor by electricity is very reliable and convenient and that the automatic control of the temperature is especially desirable. Nevertheless, it should be recognized that these machines can be operated satisfactorily without the electric control. It is but necessary to start the machine just before milking and to permit the machine to run for a sufficient period of time after milking to build up a cake of ice of sufficient size to maintain the temperature until the next milking period. In the case of the six-can tank this requires a cake of ice of approximately 150 pounds.

Such a method of operating the machine is not desirable where electricity is available, but it illustrates the possibility of the manufacturers of electric refrigerators constructing a machine would could be operated by a gasoline engine or which could be run directly from a line shaft.

Summary

Except for occasional sporadic udder infections and cows which normally give milk with high bacterial content, there are but two things essential to the control of the bacterial content of milk, namely, the prevention of contamination due to contact of the milk with unsterilized utensils and apparatus, and the prevention of multiplication of the bacteria by cold temperatures. Contamination from utensils is cared for by thorough sterilization and complete drying. Much has been done to reduce the bacterial contamination of milk by sterilizing utensils, but less progress has been made in the cooling of milk.

This study has demonstrated the economic value of 3 inches of some insulation such as compressed cork in milk cooling tanks for use on the farm. Insulation saves its cost the first summer and is essential in securing and maintaining low temperatures.

Milk of good flavor and low bacterial content can be produced by can cooling without stirring, providing the water in the tank is maintained at a temperature of 40° F., that the tank is of ample capacity, and kept full to the overflow, that the milk is placed in the tank as soon as drawn, and that the original milk should be of good flavor and low bacterial content.

The flavor of milk was not injured by cooling without stirring, nor was there any necessity of keeping the cans uncovered until the milk was cooled.

The electric refrigerators being sold for use on dairy farms appear to be practical. The machines require little attention, are reliable, and afford a constant source of refrigeration which requires no special labor at any time.

The essentials of proper milk cooling as shown in these studies are very simple, and may be listed as follows:

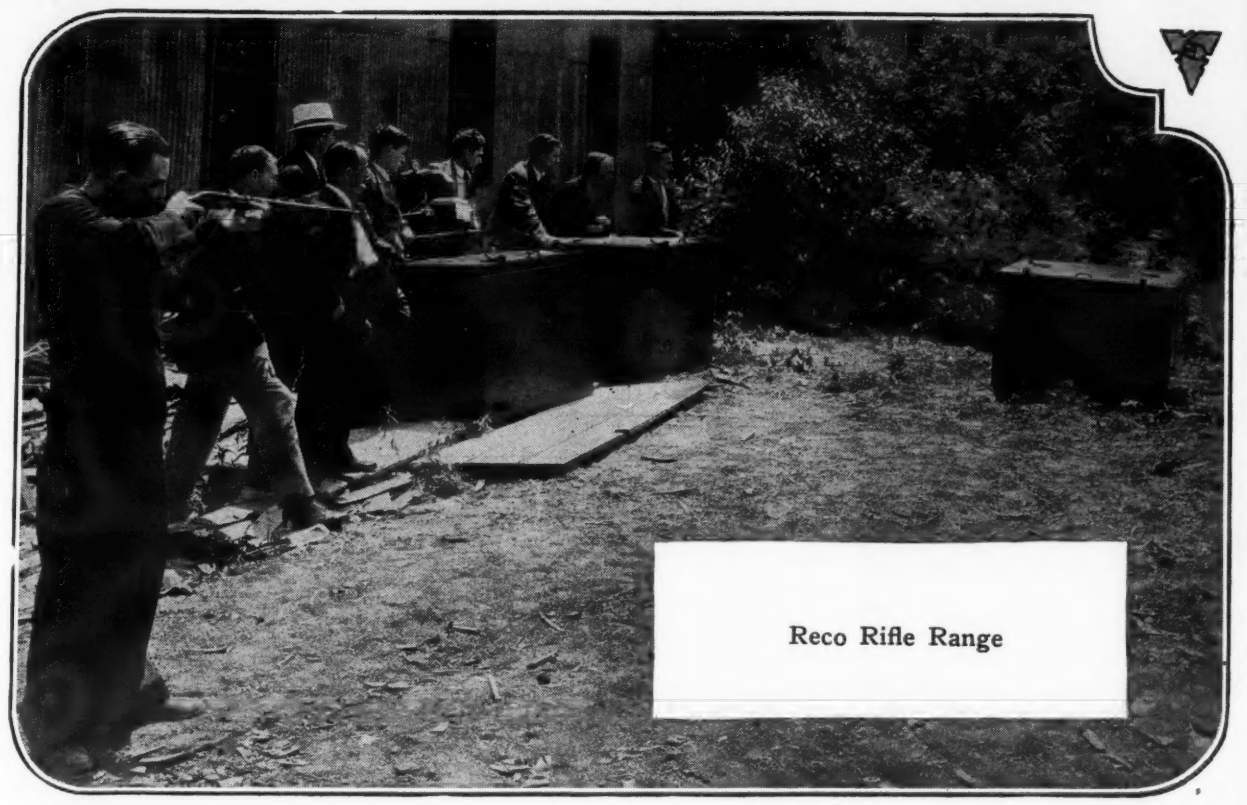
1. The cooling tank should be large enough so that when filled with cans of milk there will be twice as much ice and water as milk. Although this means a large tank, it is necessary for can cooling.
2. Insulation with 3 inches of cork, or its equivalent, protected against moisture, saved more than its cost in refrigeration in one summer. The insulation is essential for maintaining a low temperature, although 3 inches may not be necessary.
3. Milk can be satisfactorily cooled by placing it immediately after the can is filled at milking time in cold water at 40° F., providing the tank is of ample size, well insulated, and a large enough source of refrigeration is available. The milk need not be stirred or surface cooled. Should stirring be thought desirable, one stirring after one or two hours in the water is ample. For milk of bad flavor, such as absorbed feed flavor, aeration may be desirable.

FARM SERVICE

Hartford, Conn.—The Hartford Electric Light Co. is meeting with success in its efforts to install electric milk cooling machines. This work which is a farm service is in charge of Willard C. Eddy, farm service representative. At present 75 milk cooling machines are in operation on the farms served by current from the Hartford Electric Light Company's transmission lines. All are giving excellent service and are receiving meritorious praise from their users.

Mr. Eddy believes that a great increase in number of milk cooling machines used during the present year, and looks forward to installing double this number during the next four years. There are many prospects on the company lines, the number of farmers using Hartford Electric Light Company's service numbering around 800.

Whistling Lead Makes Slight Impression on Reco Cabinet



Reco Rifle Range

TESTS were recently made by the Domestic Utilities, Baltimore, Md., demonstrating the ability of the Reco milk cooling cabinet to withstand concentrated shock. William H. Ziegler, Jr., plant superintendent, is pictured here using regulation No. 22 bullets, of both the long and short types, and in neither case did the bullet cause more than a slight dent. Reco cabinets are constructed of boiler plate with interiors of copper steel lining.

This experiment drew considerable attention, judging from the crowd standing near the side of the building. The bystanders are watching closely for any signs of damage caused by the bullets. Mr. Ziegler, in his role as sharpshooter, stood about twenty to twenty-five feet away from the cabinet while firing the small calibre gun.

For years they searched for a better insulation . . . .

NOW they use Celotex

LEADING refrigerator manufacturers are always alert to improve the construction and insulation of their cabinets.

That's why today they are using Celotex Refrigerator Insulation in thousands of cabinets . . . because Celotex corrects the weak points of older insulation materials.

High insulating efficiency. . . Celotex Refrigerator Insulation is made of the long, tough fibres of cane. It is fabricated by special processes that increase its insulating efficiency to the highest possible point. It fully satisfies the rigid requirements of refrigeration engineers.

Stronger, more substantial cabinets. . . Celotex *builds* as well as *insulates.* Its great tensile strength and rigidity reinforce the walls and framework of the cabinets. Both wood and steel cabinets are improved by this extra strength and solidity . . . to resist the constant weaving strain caused by changing room temperatures.

No heat-leaking joints or seams. . . There are no open joints or seams in Celotex Refrigerator Insulation units. Each insulated area is covered by a single board of exactly the right length, width and thickness. And Celotex can never sag or settle with time.

Clean, odorless and sanitary. . . The long, tough fibres of cane from which Celotex is made are cooked and washed, making them perfectly clean. The wet board is passed through a long drier at 420° F., thus sterilizing it. The fibres are thoroughly waterproofed to resist moisture. They are entirely odorless . . . sanitary in every way.

Talk Celotex to Your Customers

Home owners everywhere know the name Celotex . . . know that Celotex is effective insulation.

Tell them that the insulation in your cabinets is a special kind of Celotex with an even greater resistance to the passage of heat . . . and capitalize their enthusiasm for cane-fibre insulation.

Talk Celotex Refrigerator Insulation to help you sell more refrigerators.

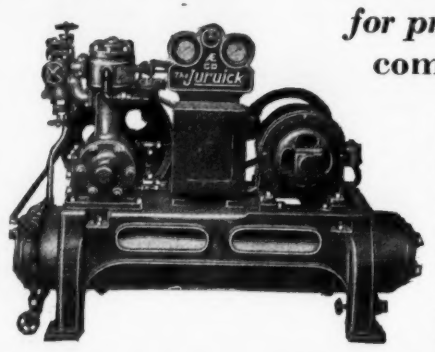
THE CELOTEX COMPANY
919 North Michigan Avenue
CHICAGO, ILLINOIS
In Canada: Alexander Murray & Co., Ltd., Montreal
Sales distributors throughout the World

The word
CELOTEX
(Reg. U. S. Pat. Off.)
the trademark of and indicates manufacture by
The Celotex Company, Chicago, Ill.

CELOTEX
BRAND
INSULATING CANE BOARD
REFRIGERATOR INSULATION

JURUICK REFRIGERATION

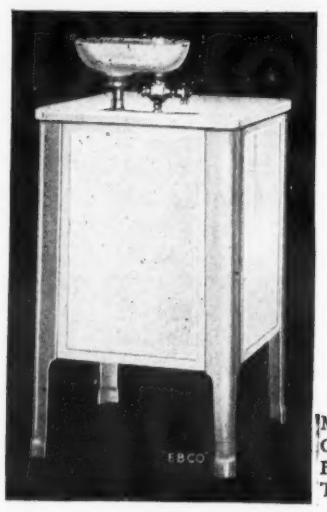
for profitable
commercial installations



When you sell a Juruick Unit, your profit isn't used up in service and installation costs. For Juruick Units are simple to install and operate and are rigidly tested before shipment to insure trouble-free service.

Juruick, with its smooth, automatic operation, requires little attention, stands up under the most severe demands and gives your customer what he wants—refrigeration that is dependable, economical, automatic. Write for information about our complete line—¼-ton to 40 tons capacity.

AMERICAN ENGINEERING COMPANY
2420 ARAMINGO AVE., PHILADELPHIA, PA.



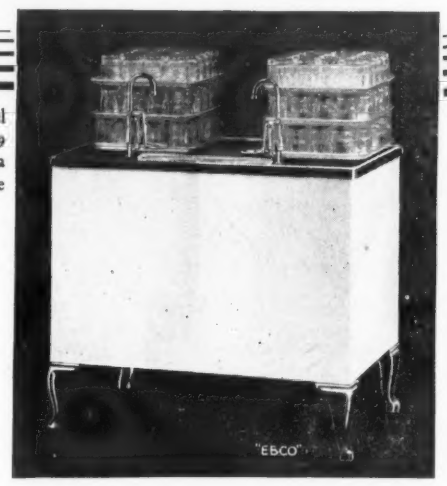
Model C-304 Bubbler Type

EBCO Leads in Special Features

The EBCO Angle Jet Bubblers and EBCO Self-closing Automatic Pressure Regulating Valves have proven the most sanitary, economical and efficient combinations for drinking purposes.

The construction of the jet produces a drinking stream inclined to form a drinking mound which is constant and ample. The automatic stream control valve maintains a steady flow, regardless of line pressure variation—no waste of water.

"EBCO"



Model C-329 Cafeteria Type

This model has storage compartment for large short time demand.

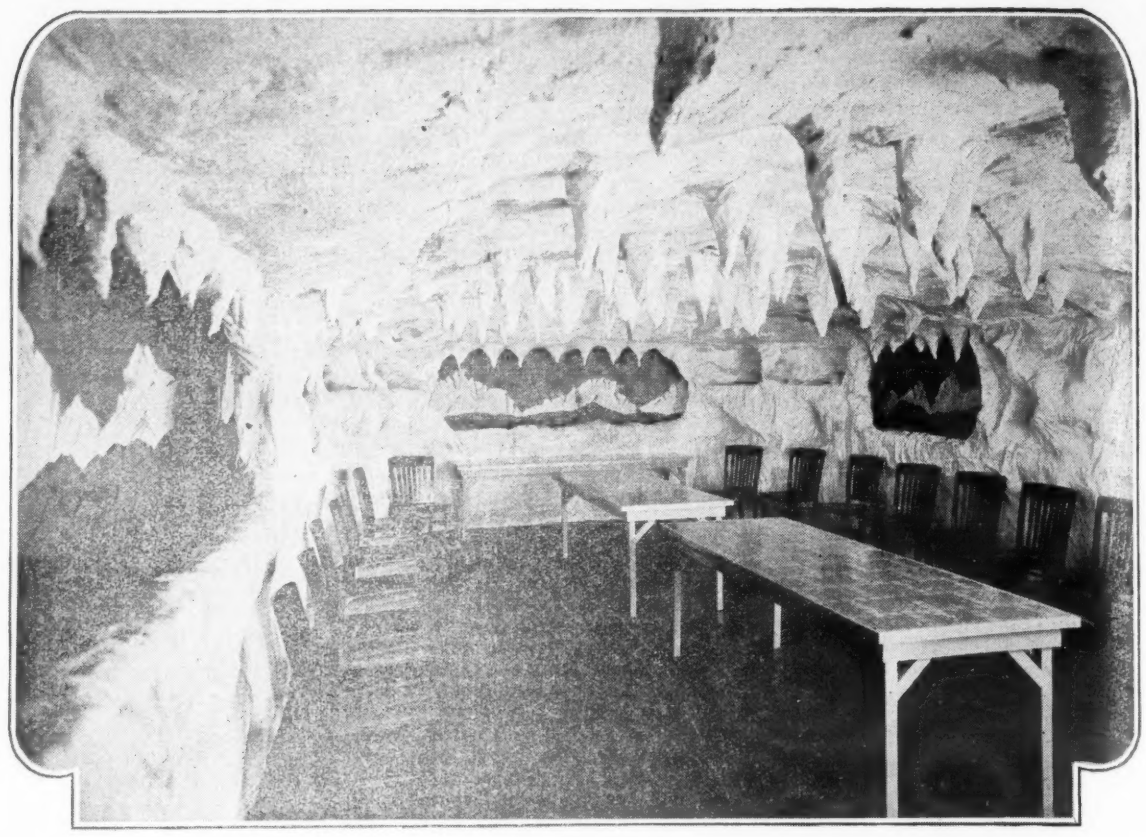
A TYPE FOR EVERY NEED

Offices, Schools, Factories and Institutions of all kinds are using EBCO Water Coolers—in types best suited to each individual need. The EBCO line embraces a complete line of fountains for supplying cool, fresh drinking water in the most sanitary and economical way. The EBCO is doubly protected—let us tell you how. Made for all types of compressors.

Write for Complete Details

Manufactured Only By
THE D. A. EBINGER SANITARY MFG. CO.
COLUMBUS, OHIO
Manufacturers also of Ventilated Closets, Urinals, Round Wash Fountains and Steel Enclosures for Toilet Rooms.

Eskimo Room is Drawing Card in Omaha Distributor's Store



Despite its Chilly Atmosphere, the Storz Eskimo Room is Very Popular with the Housewives of Omaha, Who are Interested in Refrigerated Foods

CLUBWOMEN ENJOY IT

THIS is the Eskimo Room. It's a cool cavern, located on the lower floor of the Storz Electric Refrigeration Company in Omaha, Nebraska, with decorations to resemble ice and snow and icicles.

To this cool and inviting retreat, the Storz concern, distributors of General Electric refrigerators, invites groups of club women for bridge parties, teas and cold cookery demonstrations and lectures. Hundreds visit it in the course of the year, and its appeal is doubly enhanced during warm, sultry days of summer.

In the background, make-believe polar bears disport themselves in icy water and floating ice cakes. Lights are suspended from the icicled ceiling in a modernistic design.

The Eskimo club room is adjacent to the modernly-equipped kitchen of the Storz Company, where the General Electric refrigerator is demonstrated and where dieticians are present to make new desserts, give advice on meal planning and offer new recipes.

The Eskimo room, with its unique appearance and novel appeal, was constructed for the sole purpose of aiding in the home economics work of this distributor's organization. Housewives of the community may bring their friends and members of any club or organization for an afternoon of bridge, preceded or followed by a delightful luncheon, prepared by dieticians in the Eskimo kitchen. Miss Maybelle Daggs and Mrs. Dorothy Lohrberg are the dieticians in charge.

Following the luncheon or tea, a representative of the sales force gives an interesting talk about the General Electric refrigerator. Sometimes instructive films also are shown to the gatherings.

Days also are set aside for the domestic science classes of high schools, whose teachers have asked for demonstrations or lectures on food preservation. Then, too, dieticians from the various hospitals hold meetings there from time to time.

The Eskimo room and model kitchen is used almost continuously, as members of the Storz organization come in for special luncheon meetings, dinner meetings, or even for breakfast meetings. The up-to-date modern kitchen has attracted much attention and comment throughout the Middle West.

This unusual setting has proved its worth by the curiosity it stimulated in the minds of women who have not had a chance to see it. They hear it described by their friends and immediately are anxious to visit themselves and get a glimpse of the icicles and polar bears. Miss Daggs and Mrs. Lohrberg find that arranging their schedule of meetings is simplified by the fame which the Eskimo Room has achieved.

Miss Maybelle Daggs

Mrs. Dorothy Lohrberg

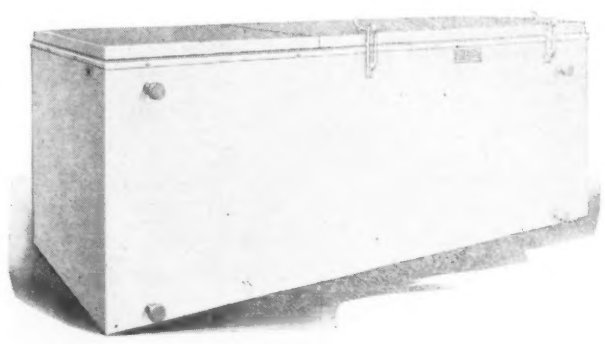
RECO ELECTRIC MILK COOLING CABINETS

"The "Toughest" and "Cleanest" Cabinet Ever Built for the Dairy

Electric refrigeration dealers selling Reco Milk Cooling cabinets this year will find these sales to represent unusually PROFITABLE BUSINESS.
For here is a "boiler plate" cabinet that sells itself—stays sold, and ever after becomes a potent factor in creating prospects and sales.
Note the cabinet construction briefly described below, then write us for further information and for sales proposition.

CABINET CONSTRUCTION

Exterior of Cabinet—Steel boiler plate 5/32" thick, welded water-tight.
Interior of Cabinet—Lined with extra heavy copper-alloyed steel.
Meeting Rail—(Around upper rim of cabinet where cans usually strike when loading cabinet.) Extra heavy steel channel 5/32" thick, welded at corners.
Insulation—3" cork board sealed in.
Cover—Split, with one end fastened down so machine can be mounted on top if desired. Insulated with 2" of an extra light weight material and sealed in. Covering is extra heavy copper-alloyed steel.
Cooling Coil—Made of best quality extra heavy refrigeration tubing. (Ammonia coils furnished on special order.)
Coil Supports—Basket type rack made of galvanized strips 1½" wide and 3/16" thick, welded. Easily cleaned.
Circulating Water Outlets and Inlets —½" and 1" galvanized pipe, one upper and one lower, mounted each side of front of cabinet.
Overflow Pipe — Combination drain and overflow located inside of cabinet. One-inch galvanized pipe.
Finish of Cabinet—Special heavy-body enamel. Color—Sea Green.



Standard 6 Can Reco Cabinet

Operates with any type of Electrical Refrigeration Units

DOMESTIC UTILITIES

Division Refrigeration Corporation of Maryland
Offices and Plant—Garrison Boulevard and Western Maryland R. R.
BALTIMORE, MARYLAND

ALWAYS BUSY

WOMEN'S church and social clubs and other groups and organizations in Newark, N. J., are making good use of the facilities offered by the home service bureau of Philip H. Harrison & Co., General Electric refrigerator distributors.

At this Home Service Institute, hundreds of Newark women have held meetings, parties, teas, and have attended lectures and demonstrations in the afternoons, while the mornings are given over to individual owners who wish to ask questions concerning the placing of food, care of food, making of desserts or salads. On the second Wednesday of every month a special demonstration is held for users and their friends. This is a permanent feature of the home service work there.

So many gatherings are being held at the institute in Newark that the procedure has become almost automatic, says Mrs. Helene T. Foster, the director of the activities. Women assemble at 1:30 o'clock in the afternoon and either play cards or hold business meetings of their own. A half hour in the afternoon program is given over to a demonstration of the General Electric refrigerator, this demonstration including the making of a frozen dessert, at the conclusion of which tea, cookies and dessert are served.

At times the room is given over to an organization which desires to conduct a special program. In addition to this, the meetings for users each month have been most successful, Mrs. Foster says. At these gatherings, users are shown how to make ice cubes in every way, as well as mousses, ice cream, ices, parfaits and so forth. There always is a table prepared with many fancy and attractive salads, gelatins, canapes, sandwiches, relishes, cakes and cookies. In the course of the demonstration, the making of these delicacies is described and recipes given. The use of the refrigerator is gone into very thoroughly, the demonstrator explaining the best method of defrosting and how to use the cold control.

The home service bureau also cooperates with local food shows, conducts demonstrations for General Electric refrigerator dealers and has filled requests for demonstrations before domestic science classes in schools.

OMAHA HOSPITAL BUYS G. E. REFRIGERATOR

Omaha, Nebr.—The Storz Electric Refrigerator Company has sold the first electric refrigerator to the Ft. Omaha Hospital unit. The C-450 was selected by the surgeon in charge.

The Storz organization is now building a series of eleven sectional sales instruction meetings in the Nebraska, Iowa, Missouri and Kansas territory controlled by this firm. Mr. Nellor, vice-president and general manager, is presiding at these meetings, while the general sales manager and his aids are giving the instruction.

BAKER

THE Baker Ice Machine Company of Omaha, Nebr., has developed a system of cooling to meet the demands of a frozen meat display case, by overcoming the inconvenience of defrosting. The temperature of the case can be controlled at any temperature from 60 degrees F. down to zero, by a simple arrangement which requires but a moment's time to adjust, and whatever temperature is required can be maintained continually with an even distribution throughout the entire box. No display space is taken up by coils, nor any force draft of air required. The system is natural circulation.

"During the past year," J. L. Baker, president of the company, said, "we have been carefully following the development of the processes of handling foods in frozen form, not only from the angle of wholesale quick freezing, but also the retail care and marketing of the frozen product.

"As a result of our investigation work, we find the wholesaler or the packer in fair shape to meet the demands of the retailer, but the retailer has many problems to overcome before he can efficiently handle frozen goods. The retail market is not equipped to handle frozen products because its refrigerated containers are not suitable for low temperatures, such as would be required for cooling or maintaining a temperature suitable for such requirements.

"As it is necessary to keep the frozen goods at a temperature of several degrees under the freezing point at all times, the following must be taken into consideration:

"1. The frozen packaged goods must be displayed and sold from the stock display. In other words we believe the full display case will be the ideal silent salesman that will assist in making more sales.

"2. The purchaser of a display case is buying display and naturally he will receive double value between the full display or the one that has top display and bottom storage closed in.

"3. Full display places the entire stock before the eyes of the public, as well as the merchant and accordingly his stock is easily kept up and more conveniently served.

"A case for handling frozen meats, for instance, must be one that is well insulated, having four plate glass vision and convenient from which to serve.

"The refrigeration to produce the freezing temperature must be of a continuous nature, and this will necessarily eliminate the present refrigerated case in which the factor of defrosting must be taken into consideration. The frozen system of handling foods will not permit of shut downs for defrosting.

"Any coil form of cooling, suspended above the meats on display, will not answer the purpose, because in defrosting these coils, a shut down is necessary and a serious warming up of the case takes place. This causes a thawing of the meats and a consequential dripping of moisture onto the display, as well as the freezing and thawing being a very severe strain on the case itself.

"As we see it, the problem worked out, is a full display case about 52" to 54" from floor to top, having a four-plate glass vision in front, with a convenient arrangement of openings in the rear. The case would be installed with insulation of four-inch cork and fully sealed.

"The refrigeration must be continuous 365 days a year and must be automatically governed to suit the working of the case, as well as the varying outside temperature."

One of the 24-hour recording thermometer charts has been sent in by the Baker Company. This chart shows the continuous temperature maintained for May 18-19. Temperatures on this day, according to the chart were kept near the 20 degree mark. Baker engineers state "That this chart is typical of the temperatures maintained over a period of three months' duration."

DEMONSTRATIONS

HOW home service activities have increased the sales of General Electric refrigerators in Iowa is shown by reports from dealer towns which have been visited by Miss Leona M. Deal, home service director for Breckenridge, Inc., General Electric distributors at Davenport, Iowa.

Miss Deal spends practically all of her time with dealers, conducting schools and demonstrations. Reports of increased sales invariably come in the wake of the demonstrations.

At Fort Madison, Iowa, where she held a three-day demonstration, which was attended by many women, sales showed a surprising increase, and many of them were directly traced to the work which the home service director did.

Another three-day school was held at Burlington, Iowa, where she obtained the co-operation of merchants to the extent that they supplied what she needed for her demonstrations. They also co-operated in newspaper advertising which focused attention on the school. The result was that during the course of the three days a number of General Electric refrigerators were sold—many of them to merchants themselves for use in their homes. Schools in Keokuk and Muscatine also were well attended.

During the course of a two-day school, Miss Deal usually devotes the first day to the preservation of foods and to the making of ice cream and sherbet and other similar desserts. The second day includes discussion of frozen salads. In the case of a three-day school, the last day usually is devoted to General Electric users who always are enthusiastic she says, and who are always interested in new recipes.

In very small communities, Miss Deal has been very successful in holding demonstrations in the home of the dealer. When in larger communities, she cooperates with public utilities who do a merchandising business.

She has become exceptionally well known in the dealer territory, with the result that she has been invited on many occasions to the home of a member of some club, to which all other club members are asked to witness demonstrations.

"We feel that the results we have obtained from Miss Deal's schools and

Leona M. Deal

demonstrations have been beneficial and have done a great deal to create prestige for our product," says J. M. Breckenridge, sales promotion manager for Breckenridge, Inc.

REINDEER

More valuable than Alaska's gold is reindeer meat, is the opinion expressed by the Lomen Reindeer Corporation of Seattle, Wash., in a pamphlet recently published. Chops or steaks should be broiled, or fried, on a quick fire, well seasoned and served with candied sweet potatoes and jelly. The service plate should always be hot.

From soup to goulash to panned chops this new meat is gaining attention. With scientists and dieticians vouching for the healthfulness and delectability of the meat, Lomen gives tried recipes for its preparation.

Reindeer Hunter Soup.—Cut two pounds of reindeer meat in small pieces and put into the soup pot (casserole) and add two quarts of water. Chop one onion, pinch of mace and one bay leaf, add to the meat, let it simmer until the meat is tender, add one cup of rice, salt and pepper and let it cook until the rice is done. Pour into the tureen over French croutons and serve.

Roast Leg of Reindeer Meat.—Wipe meat, sprinkle with salt and pepper, place on rack in dripping pan, and dredge meat and bottom of pan with flour. Place in not too hot oven and baste as soon as flour in pan is brown and every fifteen minutes thereafter, until meat is done, which should be cooked rare. It may be necessary to put a small quantity of water in pan while meat is cooking.

Reindeer Goulash.—For this purpose use neck, shoulders and flanks. Cut them into two-inch squares. Prepare the meat exactly in the same manner as you would a Hungarian Beef Goulash. Serve spaetzel with it.

MERCHANDISING

THE Institute of Food Merchandising is reported to have opened permanent headquarters in Dallas, Texas, is said to be sponsored by a group of food and food-store-equipment manufacturers, to conduct research and bring organized merchandising information of a definite and permanently constructive nature to the retail grocer and his employees. Its help, it is announced, will be available to all merchants and employees regardless of location or size of store operated.

It is stated that the Institute will establish a completely equipped food store as a school for training retail food sellers. Weekly classes are reported planned, in addition to co-operative plans of display and sales promotion.

PUSH THE SERVEL COMMERCIAL SERIES
STURDY ·· DEPENDABLE ·· ECONOMICAL ·· COMPLETE

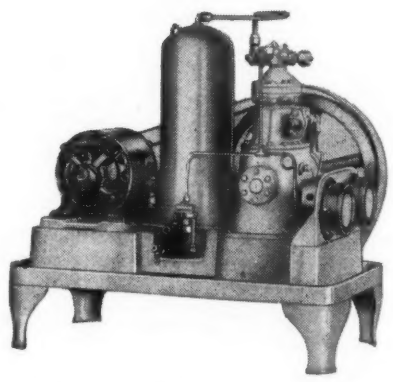
Lower Service Costs increase your Profits . . .

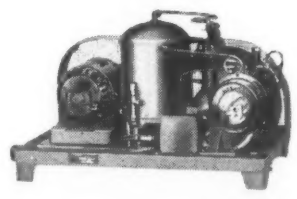
WHY do Electric Light and Power Companies offering several types of domestic refrigeration eventually concentrate on Servel for their commercial refrigeration business?

They realize that lower service costs mean larger profits for this important department of their business.

They are familiar with the expert engineering and sturdy construction of Servel. They have learned that Servel machines stand up better under the hardest kind of usage—that they require less repairs, less replacements of parts, less service expense of every kind.

These statements have been proved in city after city. Records of companies who have several different types of refrigeration on their lines prove Servel costs least to service.





Above all, Utility executives appreciate that the rugged dependability of Servel assures the satisfaction of their customers far beyond a brief guarantee period—and builds lasting confidence and good will. The completeness of the Servel commercial Series makes it easier to meet each customer's needs exactly.

So far the tremendous market for commercial refrigeration has hardly been touched. Thousands of profitable sales are waiting for the men who go after them *now!* Write and learn whether the Servel Franchise for your territory is still available.

This Great Market

MEAT MARKETS
GROCERY STORES
HOTELS AND RESTAURANTS
DAIRIES AND BAKERIES
FLORISTS AND HOSPITALS
DRUG STORES
CONFECTIONERS
ICE CREAM DEALERS

• BEAUTIFUL DOMESTIC REFRIGERATORS
DEPENDABLE COMMERCIAL MACHINES •

SERVEL SALES, INC. SERVEL EVANSVILLE, INDIANA

SMALL CITIES

In South Buy Cudahy's Frozen Meats

EVERYONE is interested in knowing how quick-frozen meats are selling in various sections of the country. The following statement from the Cudahy Packing Co. gives a good idea of the present distribution of that organization's packaged and quick-frozen products:

"With reference to our frozen meats in individually wrapped packages, the departments that have been created recently by our organization are already operating near capacity in the production of these meats. It is felt generally by our people that for the time being the demand in the larger cities for these retail cuts will be for the fresh meats and not for the frozen, and that it probably will be necessary to prepare these meats fresh locally in these larger communities. Of course, wherever a scarcity of one class or another of meat develops, it is probably that the demand for the frozen or frosted product will be created.

"At present, however, the greater demand for the frozen meats in packages is in the South where, because of the rather indefinite quality of the local product, which is not comparable to that of the western corn-fed beef, there is an active inquiry for the frozen cuts from western beef frozen and packed in individual packages.

"This is particularly true in the smaller cities of the South that have not had fresh meat distributing branches and facilities for selling fresh meat. It also applies to some country points in the northern part of the country. It is anticipated that there will be an active demand for this class of product from summer and winter resorts."

Not content with a waiting policy, the Cudahy organization is planning in the near future to put several specialty salesmen into certain territories for the purpose of introducing and selling quick-frozen meats. Those in charge of this department of Cudahy's realize that the quick-frozen products are not going to sell themselves; that some active measures must be taken to point out to the retailer the constantly increasing public acquaintance with the new frozen foods.

The numerous articles printed in various national magazines have stimulated the public interest in quick-frozen meats, fruits and vegetables to a much greater extent than the average retailer realizes. The Cudahy salesmen will cover their territory thoroughly, and will make quick-frozen meats a subject of interest wherever they go. They will take full advantage of the public desire to see and try out the new foods.

This definite abandonment of the policy of expecting branch managers, whose best friends and customers are the butchers, to push products which the butchers dislike and fear, will give quick-frozen meats an opportunity to prove their worth which hitherto has been denied them in most sections of the country.

The Imitation Food Products Co.

(Branch of The Artistic Production Co.)

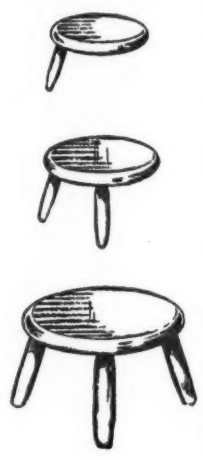
107 Lawrence Street

Brooklyn, N. Y.

Ask for our catalog of January 1, 1930. Direct sales only. "Indispensable with refrigerator display."

HERE ARE THE 3 ESSENTIALS OF CORRECT FOOD STORE REFRIGERATION

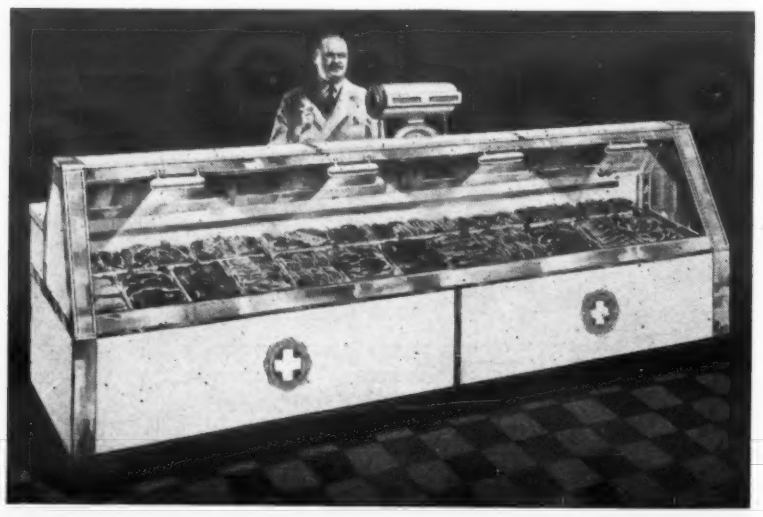
1. uniform low temperature
2. controlled humidity
3. revolving air circulation



THE three essentials of correct food store refrigeration are uniform low temperature, controlled humidity, and natural air circulation. Like the three legs of a stool you will only get satisfactory results when these three essentials are satisfactorily combined.

You get these three essentials of correct refrigeration in the new Hussmann 5100 Patented Quick Service Counter when properly refrigerated with a standard mechanical refrigeration unit.

Write us for full information about the Hussmann patented system.



HUSSMANN

Refrigerator Company, a division of the

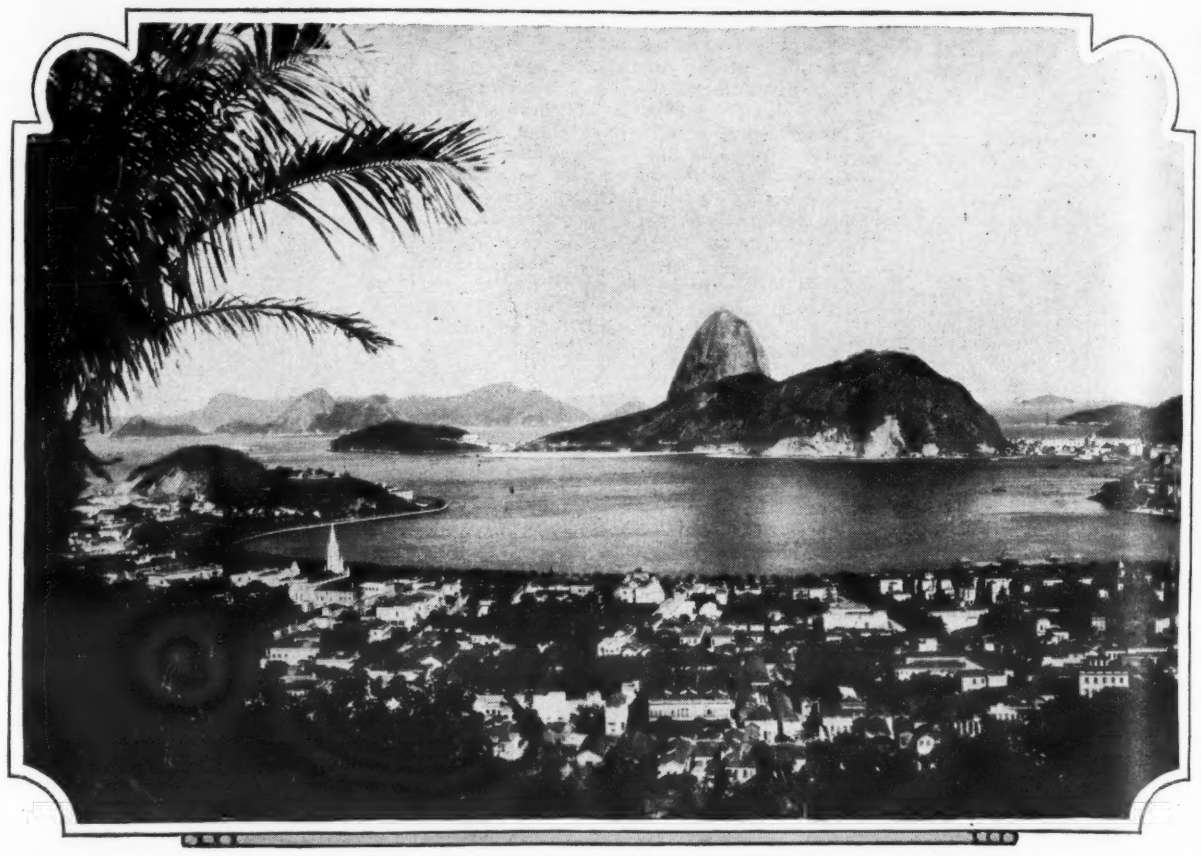
ALLIED STORE ASU UTILITIES CO.

General Offices—Saint Louis

Sales Representatives in all principal cities

REFRIGERATION IN RIO

Demand for Modern Equipment Increases in Brazil



Pao de Assucar, the Steep Rock in the Rio Harbor, is the Abode of Frigidaire Equipment. The Half Way Station Uses Refrigeration to Protect Foods

THE electric refrigerator salesman's idea of heaven—an ice shortage in 100 degree weather—was an actuality in Rio de Janeiro last November, according to H. R. Coate, foreign advertising manager for Frigidaire Corporation, who recently returned from an extended South American trip.

At the height of a heat wave which kept thermometers over the 100 mark for weeks at a time, one of the largest ice plants in Rio broke down and the rest found themselves unable to supply the unusually heavy demand. Ice was selling for as much as $1.55 a hundred pounds.

Electric refrigeration salesmen found the price problem in the background with immediate delivery the all important sales factor, according to Mr. Coate. Nearly half the butcher shops in Rio are equipped with mechanical refrigeration, with Frigidaire equipment making up a large percentage of the total, he said. It is a frequent sight to see a butcher shop using antiquated scales and primitive shopping blocks in connection with modern electric refrigeration equipment.

Electric refrigeration rapidly is finding a popular demand in South America, Mr. Coate reports. Fast growing popularity of ice cream products in Latin American countries is contributing to the increased demand for refrigerating equipment. In Uruguay, for instance, even the bars are making as much profits from ice cream sales as from vending alcoholic beverages.

Restaurants and hotels are turning to electric refrigeration just as similar places in the United States have found in this equipment the best answer to their refrigeration needs. The Itajuba hotel in Rio is one of the many hostelries that are completely equipped with Frigidaire. In addition to a water cooling installation on the roof serving each of the sixteen floor pantries, these pantries are equipped with storage pantries. An ice cream cabinet completes the installation.

The Tourist restaurant in Rio, one of the most popular with northern visitors, is completely equipped with Frigidaire. The cold room of this restaurant is made up of three divisions. One, for the storage of meat, maintains a constant temperature of 42 degrees. The vegetable room is kept at 48 degrees, while the seafood chamber is kept at the freezing mark—32 degrees. Total storage capacity is 100 cubic feet. Two additional cabinets on the main floor also are refrigerated with Frigidaire equipment.

An unusual installation in Rio is that at the store of R. Formosinho y Cia., where a fin coil is located in a special compartment to keep expensive gloves from suffering under the temperature and humidity conditions prevalent in that locality. A $2,000 stock of gloves is preserved in this manner, with a special arrangement provided to keep them from drying out too much. A temperature of approximately 57 degrees, Fahrenheit, is maintained.

Visitors to Rio de Janeiro usually look forward to the inevitable trip to the summit of Pao de Assucar—"Sugar Loaf"—as a day of exertion and strenuous climbing, basing this assumption on the first sight of the steep rock which juts out of Rio harbor. The actual ascent, however, is one of ease. Cable cars carry the "climbers" from the base to the half way station at Urca, where a transfer is made to another cable car traveling to the summit.

Urca, as befits a center of tourist interest, is well equipped for providing visitors with all the necessary comforts. A large modern restaurant and refreshment house, completely equipped with United States built electric refrigeration equipment offers this hospitality.

Frigidaire equipment installed at Urca consists of an ice cream cabinet, a nine-foot marble display counter for sea foods and fruits, a specially built beer and wine cooler, and a serving box in the kitchen.

Another restaurant is being erected on the top of Pao de Assucar, and Frigidaire equipment has been ordered for this place also.

WATER COOLERS PROMINENT IN BOSTON SHOW

Boston, Mass.—The Frigidaire Corp. showed a display of water coolers and room coolers at the International Textile Exposition held early in May at Mechanics' Hall, Boston, Mass. The booth was a part of the power show where a number of refrigerating devices were on exhibition. The Frigidaire Corporation showed five types of water coolers especially designed for use in industrial plants. The display attracted much attention and comment. It was explained by those in charge of the booth that the use of this cooling arrangement did away with the possibility of cramps, as was often the result when workers drank ice water. Its use for that reason, as well as other reasons, would add to efficiency of workmen.

NEW HAVEN PLANT SOLD

New Haven, Conn.—The plant at 183-197 State street, occupied by the People's Cold Storage Company, provision warehouse, has been sold to the Meriden, Connecticut Savings Bank for $80,000 on a court order following foreclosure action. The plant is four and one-half stories and includes among its equipment two 20-ton Lipman automatic units, installed two years ago. Joseph Alexander is general manager.

ORGANIZER

New York, N. Y.—John G. Gaines, water cooler specialist, General Electric Co., Cleveland, is organizing a new division of the Rex Cole Commercial Department, in response to the ever growing demands for water coolers. The twelve men in this group will be subject to L. H. Jenks, Jr., manager of the Commercial Department.

Interior of Urca's Modern Restaurant. Here Refrigeration Has an Active Part

SEAFOOD

Is Basis of Big Variety of Delicious Dishes

By Mrs. Phyllis K. Dunning
Home Service Department, The Society for Electrical Development, Inc.

THERE are three things in the world we hate and one of them is fish. Outside of the lobster, properly cooked and well sauced, you could take everything that thrives in water and cause it to become extinct and our face would still wear its happiest dietary expression. We regret this because it sometimes has unfortunate consequences. For instance, there was the young man who regaled us for a half hour with a story of how he fought for hours in an effort to land a tuna (or maybe it was a tarpon). Anyway, when he paused in his narrative long enough to gasp for breath, we inquired, "Why didn't you just let it go?" This, children, is not the question to put to an enthusiastic fisherman. That young man, and he's a nice young man, too, has never looked upon us with favor since. Not even with tolerance. It's slips like this that play havoc with one's social aspirations!

Anyway, we realize that fish has a certain dietetic importance. It's good for you to eat fish. Also certain people are very fond of it, and those people have a way of being members of one's family, as well as friends who get invited to dinner. So we worked out a series of dishes having fish as the basic ingredient which even an anti-fisher can eat with enjoyment. Even if you like fish when it is brought to the table with its head and tail still attached, you will find these dishes tasty, and if you aren't keen about the scaly things, they will be a veritable boon.

Fish Souffle

4 tablespoons butter
4 tablespoons flour
1 cup or more flaked, cooked fish (salmon is especially good)
1 teaspoon lemon juice
1 cup milk
3 eggs
1 teaspoon salt
¼ teaspoon pepper
dash of cayenne

Melt the butter on high heat on your electric range or in pan of electric grill. Add flour and blend well. Reduce to low heat and add the scalded milk, gradually stirring until smooth and thick. Beat the egg yolks well and add them. Add the seasonings and the fish. Beat the egg whites stiff and fold them into the fish mixture. Butter a casserole and pour in the fish mixture. Bake at moderate heat in an electric oven until top is lightly browned. Or butter the deep inset pan of electric portable oven and bake on high heat in the portable oven. Or pour into inset pan of double boiler and cook over hot water on electric grill until firm.

Serve with a cheese sauce. We melt a package of Pabstette and thin it out with a little cream, pour it into a bowl and pass it with the souffle. Baked potatoes and asparagus are elegant with this souffle.

Baked Cod

1 to 2 pounds of cod steak
1 tablespoon flour
½ chopped green pepper
1 can tomato soup
1 chopped onion
salt and pepper

Rub the cod with the flour and lay in a greased baking dish. Sprinkle with salt, pepper, the chopped onion and chopped pepper. Pour the tomato soup over all and bake in electric oven at moderate heat for 30 minutes. Serve with the sauce in the pan poured over the fish.

Halibut Steak with Dressing

2 halibut steaks, each about 1 inch thick
salt and pepper
1½ teaspoons olive oil
1½ tablespoons butter
2 cups chicken dressing
1 cup milk
1 teaspoon lemon juice

Brush the steaks with oil, sprinkle with lemon juice, salt and pepper and spread on both sides with softened butter. Place one steak in greased baking dish and spread with the chicken dressing. (A good bread dressing is best.) Place other steak on top and pour milk in pan. Bake 45 minutes in electric oven at moderate heat, basting frequently with the milk in the pan.

Tuna Fish Pie

4 tablespoons butter
3 cups milk
¼ teaspoon pepper
1 cup diced potatoes
1 large can tuna
6 tablespoons flour
1 teaspoon salt
1 cup diced carrots
1 cup peas
biscuit dough
½ cup mushrooms

Melt butter on high heat on electric range or in pan on electric grill. Add flour, and when thoroughly blended turn onto low heat and add scalded milk, stirring until smooth and thickened. Add the seasonings the cooked vegetables and the flaked fish. Pour into greased casserole, cover with biscuit dough and bake in electric oven at high heat until biscuit dough is browned. Or pour into deep pan of electric portable oven and bake at high heat. Pastry crust may be used instead of biscuit dough if desired.

All you need to serve with this as a main coarse is a crisp salad. For a quick dinner make this up in the morning, store it in your electric refrigerator and slip it into the oven just in time to have it ready for serving.

ELECTROLUX IN SPOTLIGHT AT COOKING SCHOOL

Middletown, Conn.—An Electrolux furnished by Blau's Electric Service Shop, Inc., 475 Main Street, was used by Mrs. Edna Riggs Crabtree in her cooking school demonstrations under the auspices of the Middletown Press at the Masonic Auditorium here.

DEVELOPMENT

(Concluded from Page 5, Column 3)

lic about the very latest perfection in some detailed feature.

Constant research and development have brought the small household unit to a point where the refrigeration machine has a capacity of as high as 4 b. t. u.'s per watt input of electric power. Machines must be quiet almost to the point of silence in operation. This performance has been obtained mainly through precision manufacture, where maximum tolerances on parts are no greater than two ten-thousandths of an inch or 1/24 the thickness of a sheet of paper, tolerances not even approached in the manufacture of the finest automobile or aeroplane motors made.

The public is being educated to insist on the finest perfection in cabinet design—appearance, hardware, shape, size, ice-making capacity, etc.

The development of household units has finally reached the stage where one can obtain a mechanical refrigerator that automatically maintains different temperatures for all of the various requirements of one refrigerator. One temperature of below 50° in the food compartment, another temperature below freezing in a storage compartment, to preserve frosted foods indefinitely; still another temperature in the sleeves of the cooling unit, for freezing of ice cubes at the average speed, and, finally, a temperature for freezing ice cubes fast —yes, in less than 60 minutes.

If we were asked five years ago to produce a household unit that would automatically maintain four different temperatures for the purposes mentioned above, without manual regulation of any kind, without extra valves or "doo-dads," and to design it so that the entire refrigerating force of the machine automatically concentrates on the job of freezing a tray of ice in less than 60 minutes from the time the tray was placed in the unit, regardless of whether the unit was on the off cycle or not, what would we have said? "It can't be done!" But it has been done, and this industry has many other tough problems ahead, all of which I am sure some one here, right in this audience, or a member of the Institute, or his associates, will solve.

PARSONS SALES GOOD IN KANSAS CITY

Kansas City, Mo.—Encouraging business conditions in Kansas City are reflected in the reports of April sales of the R. E. Parsons Electric Company, distributors for the Frigidaire Corporation. The reports show that this city ranked 14.4 points above the twenty leading sales districts of the organization.

TO SELL KELVINATORS IN DANBURY, CONN.

Danbury, Conn.—Emil Grolljahn, 51-53 Main Street, has taken the local agency for the Kelvinator electric refrigerator.

New Binders now ready

for keeping your copies of

Electric Refrigeration News

In providing new binders for readers who like to keep back issues of the news in accessible form several improvements have been made.

The new binder is of larger capacity than the old because of the increased thickness of the paper. Twenty-seven metal retaining strips are furnished, since 27 issues will be published in 1930. The metal strip is inserted easily and quickly at the middle of each issue and does not "pinch" the paper at the binding edge. Every page lies flat and all type matter is easily readable.

On the new binder the name "Electric Refrigeration News" is neatly stamped in gold on the back binding edge as well as on the top cover. The binder has stiff covers of good quality black imitation leather.

You'll find the binders mighty good-looking and very convenient. A flip of the finger brings a back issue before you when you want to look up an article—an illustration—some information. Buy a binder!

Shipped postpaid upon receipt of $3.75.

Electric Refrigeration News
550 Maccabees Bldg., Detroit

THE CHIEF TELLS THE JUNIOR SALESMAN

"DOES CORKBOARD COST MORE THAN OTHER INSULATION?"

"It's no secret . . . corkboard costs nearly twice as much as other materials.

***Despite* this extra cost manufacturers use corkboard because there's no 'second-best' that even *approaches* the efficiency and permanency of this dependable insulation."**

Novoid Corkboard Insulation

CORK IMPORT CORPORATION — 345 W. 40TH ST., NEW YORK

"Permanent Protection for All Refrigeration"

The meat packing, cold storage, and ice cream industries buy millions of feet of insulation every year. They invariably specify corkboard—at greater cost—because it gives safe protection, faster and more lasting refrigeration.

Better Homes

THE "Arizona Republican" Better Home Show, held recently at Phoenix, Ariz., drew 1,500 women each day for several days. The Electrical Equipment Co. of Arizona had a booth with Kelvinators prominently displayed, and the exhibit pulled strong. Three thousand women gave their names and addresses, many of whom will be prospects for electric refrigeration during the summer and fall months of this year.

The picture here gives unmistakable evidence of the interest the women of today take in things that pertain to the home and its betterment.

NOVEL TYPE

Of Milk Cooler Performs Triple Functions

THE milk cooler manufactured by the P-T Milk Cooler Company, Cleveland, Ohio, combines into one unit the principles of an aerator and an agitator. It is designed as a mechanically refrigerated unit, either gas engine or electrically driven.

This cooler consists in part of a tank of conventional flat end, round bottom design, with three inches of insulation, with outside metal lining, the whole mounted in a heavy angle iron frame, which, in turn, is supported by cast lugs into which are screwed 1½″ pipe legs. Outside dimensions are 65″ long, 30″ wide and 36″ deep. The unit, when mounted on legs to allow standard milk can to clear valve, stands approximately 54″ high. The compressor is mounted on top of the unit and adds about 18″ to necessary head room.

Inside the "brine" tank is mounted the milk tank, and the mounting consists of supports bolted to the bottom of the "brine" tank at each end, and to the ends of the milk tank, allowing a free space around all sides of the milk tank. The milk tank is connected through to the outside by a specially designed sanitary valve made water-tight where it passes out of the brine tank by a packed gland joint.

Iron Frame Permits Removal of Condensing Unit

The main brine tank cover is sloping and is cut to allow a space of 3½″ between the cover edge and the edge of the milk tank, and in this space is set a heavy, welded angle iron frame to the bottom of which are welded supporting legs for the evaporating coil. This angle iron frame with its top cover plate supports the compressor, making it possible to lift the whole condensing unit completely out of the tank.

The milk tank dimensions are as follows: 44″ long, 9″ wide and 31″ deep, with rounded bottom. Corners are rounded to make cleaning easy. Frame is of galvanized angle iron. Brine tank and outside linings, covers and sheet metal parts are made from zinc-copper impregnated steel.

Milk tank is of heavy sheet copper, tinned on both sides, with special double lock seam joints. Top service bead ring is formed of No. 3 heavy Monel sheet, and tank supports are "T" iron shapes, hot galvanized, and strapped on with copper strips. The outside of the milk tank in contact with the brine has been tinned to insure freedom from deposits from the brine.

A nationally known compressor and motor assembly, complete with an expansion valve and a control switch, are used. A special compressor base has been designed to fit the unit, and it is possible to substitute other makes.

Sanitary Valve Eliminates Small Pockets

The sanitary valve is of the flush type and consists in part of a brass casting, securely fastened to the milk tank. This casting is machined out inside to take a 1½″ O. D. brass tube. The valve seat is a continuation of this tube, but of pure nickel swedged out to the angle of the valve seat. The angle of the whole valve tubing, with respect to the milk tank, is such that the valve seat section is level with the bottom line of the tank, resulting in absence of any small pockets in which milk might collect. The valve plug is a brass casting with a section of pure nickel tubing pressed and sweated on. The plug rod is a Monel metal tube. The assembly incudes a cast brass slip-on elbow outside, a spring and ball handle which latter screws into the end of the Monel tubing. When not in use during the day, a rubber plug is provided to close up the valve tubing from the outside.

Ten or twelve hours of running time will form a block of clear ice over the coils completely surrounding the milk tank.

A strainer plate to guide the strainer is provided to take its place over the milk tank after the milk tank cover has been removed, and under regular operation conditions, the push button on the special control, is pressed to throw the switch when the dairyman starts pouring milk through the strainer into the tank.

The action of the milk falling into the tank through the strainer with the fan moving the vapors from the surface of the fluid, serves to aerate the milk. Each pail of milk poured into the tank operates to agitate and cause necessary movement in the rest of the body of milk.

Design Insures Quick Transfer of Heat

No previous aeration or agitation is necessary. The long narrow design of the milk tank insures quick heat transfer, and, based on a pail of milk poured into the unit every four or five minutes, the resultant temperature when milking is finished is less than 50 degrees.

Immediately prior to the commencement of the morning's milking, the previous night's milk, which is still in the tank, can be drawn off in cans. The temperature of the night's milk will be only slightly above the ice temperature—about 34 or 35 degrees. During the cooling process the milk is not frozen.

Tests throughout the past year from actual operation have proven that power consumption necessary to secure good results averaged less than 1.5 kilowatt hours per hundred pounds of milk handled.

Cleaning of the milk tank is a simple matter. All valve parts necessarily come apart when the valve plug is removed each morning for cleaning and flushing the outlet. This insures proper sterilizing of all valve parts by placing them in a pail of lime or chlorine water.

The cooling unit, complete with evaporating coil, is one self-contained unit and may be lifted completely out of the tank for servicing. In this case ice formation is sufficient to take care of two or three milkings. The control device has been designed so that it can be removed without hauling the balance of the unit to the repair shop. The switch can be easily removed and often it may be replaced without the aid of a serviceman.

ATTENTION

Service Managers of Cabinet Service Departments

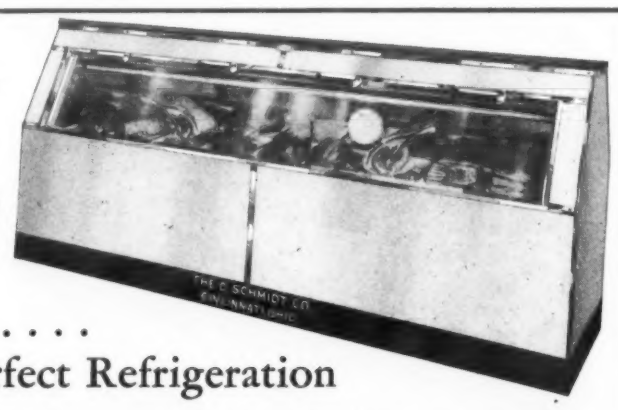
By having J. Moss & Sons replace your monel tops, panels, collar rings, revamp old lids like new, and other worn or broken parts, your present ice cream cabinet can be reconditioned to look and wear like new.

We give you the highest quality obtainable and our prices will save at least 20 per cent on replacement expenditures. And you can depend on our prompt service. Write or wire for price lists and additional information.

Also Manufacturing Sheet Metal Parts and Stampings

J. Moss & Sons
630 Hudson St. New York City

Thesco Refrigerator Display Counter No. 2700



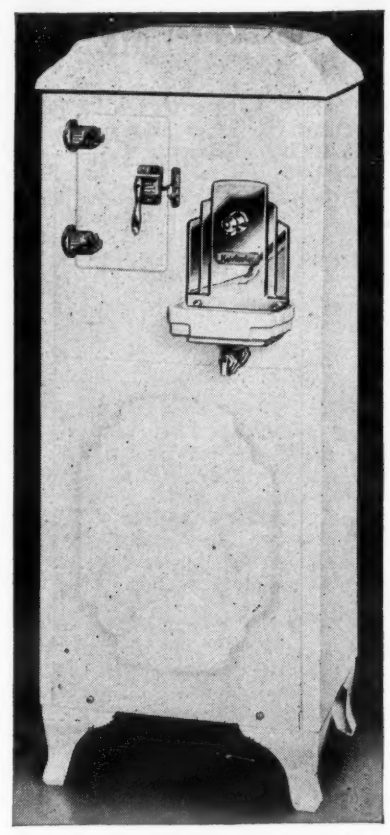
QUALITY THESCO SINCE 1870

Display . . . . Plus Perfect Refrigeration

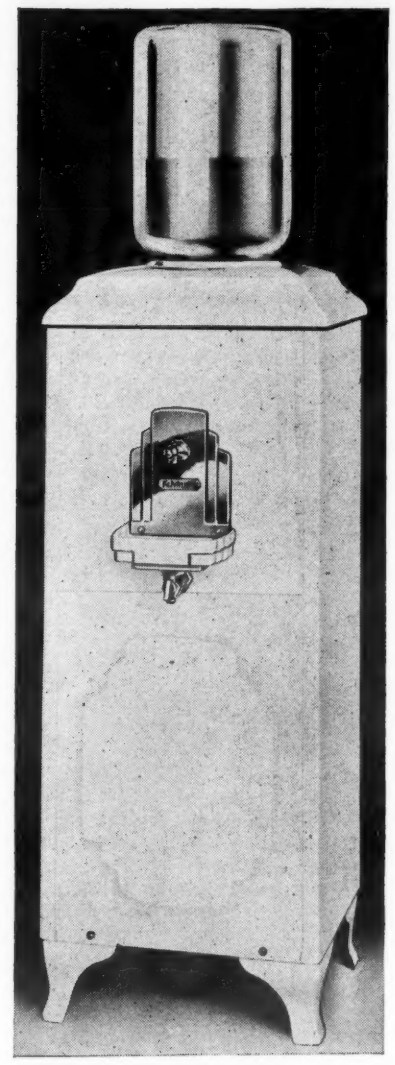
The great demand today is for unique qualities of display, with no sacrifice to practicable refrigeration. The Thesco Refrigerator Display Counter shown above meets these specifications unconditionally. Write for literature which fully explains the many attractive features of this outstanding unit.

DISTRIBUTORS: A limited number of fertile territories are open at present to Thesco representation. Write for complete proposition and complete illustrated catalogs, describing 70 styles of Refrigerator Display Counters and other refrigerator and store equipment; and showing 106 items of interest to Hotels, Hospitals, and Institutions.

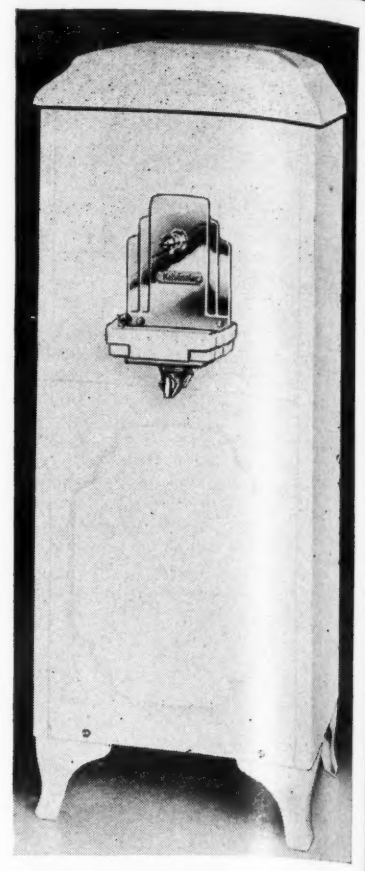
THE C. SCHMIDT CO.
JOHN AND LIVINGSTON AVENUE CINCINNATI, OHIO



New Kelvinator Water Coolers



Three of the new models (left) C W 50, (above) B W 10 and (right) C W 30



KELVINATOR engineers have developed a line of water coolers that are new in every detail. The cooling coil or low-side combines every desirable feature of the instantaneous type, together with the overload capacity of the reserve storage type. This is accomplished without the sacrifice of space or the use of the old-fashioned water bath system, yet it has the same hold-over capacity which was the big feature of the bath type.

The entire cooling coil assembly is enclosed in a porcelain shell and is of extremely small dimensions. Another outstanding achievement is the new water cooler condensing units. These have been designed for the sole purpose of cooling water and are of the vertically mounted type, with the compressor above the motor. Particular attention is paid to accessibility, with the result that all service valves and belt adjustments are grouped on the front of the unit, which make them instantly accessible upon removal of the front panel of the cabinet.

Safety has been given due consideration in the new Kelvinator water coolers, thereby preventing any freeze-up. This is accomplished in a two-fold manner: First, the expansion valves are equipped with an arrangement whereby it is impossible to adjust it to a temperature low enough to freeze the water. Second, the extended bulb of the thermostat is located in direct contact with the cooling coils in such a manner that operation of the condensing unit is interrupted whenever the temperature approaches the danger point.

In a cooler of surprisingly small dimensions are supplied two capacities—3½ and 6 gallons an hour—which is ample for any but heavy industrial uses.

The cooling and condensing units are mounted in cabinets with long, straight uninterrupted lines. The lines of the gleaming white porcelain top accentuate the smart simplicity of the whole design. All hardware and trim is in the modernistic mode and is in harmony with the motif of the domestic line.

G. E. SALES

Cleveland, Ohio—Marked increase in sales of the General Electric five-gallon bottle water cooler has been noted during the past few weeks, says W. E. Landmesser, manager of the commercial division of the electric refrigeration department, General Electric Company.

Distributors and dealers in many sections have put on extra salesmen to handle the bottle water cooler business, he says. The bottle cooler was first brought out last August, but it was October before production started on a big scale. Orders are coming in now from theaters, offices, stores, hotels, professional offices and hospitals for this product.

"The public is realizing more than ever that drinking water, cooled to the proper temperature, promotes health and efficiency," Mr. Landmesser declares. "Life insurance companies, physicians and others interested in the public health urge the drinking of good water. Theaters and other institutions and offices are recognizing the fact that water coolers are good will builders.

"But good drinking water in itself is not sufficient. It must be properly cooled—to the right temperature. It can't be too warm, nor too cold. Water should be cooled to between 45 and 50 degrees. Water at that temperature means better health and greater efficiency to customers and employes. Water which is too warm is unpalatable and unsatisfying. By the same token, water too cold discourages the drinking in quantities that are needed.

"Good drinking water is just as necessary in the winter, as in the summer, and properly cooled water is an inducement to drink more in winter. The cooler costs very little to operate and it can be turned off over the week-end and then turned on again on Monday morning; requiring only six minutes in which to cool the water to the proper degree."

DETROIT'S GREAT HOMELIKE HOTEL

IN THE VERY HEART OF DETROIT

THE TULLER is the headquarters for tourists and travelers. Delightfully furnished, homelike atmosphere. Abundance of air and sunshine, large, spacious lobbies and lounging rooms. Famous for our restaurants.

800
ROOMS WITH BATH
$2.50 and up

HOTEL TULLER
Facing Grand Circus Park
HAROLD A. SAGE, Manager

CHILLED FOODS

DELIGHTFUL dishes prepared with the aid of an electric refrigerator are winning favor with housewives. In Baltimore, the Gas & Electric Company publishes many recipes in the *Culinary Courier*, a publication that is distributed to women. Miss Anna Trentham, director of the bureau of home economics, recently issued the recipes mentioned here.

Tomatoes Stuffed with Ham

6 ripe tomatoes
¾ cup cold cooked ham
¾ cup mayonnaise
1 teaspoon salt
½ cup celery
1 hard boiled egg
1 tablespoon grated onion

Remove the skin from the tomatoes and scoop out the inside pulp. Chill the shells in the Kelvinator. Combine the ham with the tomato pulp, chopped celery, onion and egg. Fold in the mayonnaise and add the salt. Fill the tomato shells with the mixture and serve on crisp lettuce leaves.

Stuffed Celery

Wash celery, remove all but young leaves. Fill hollows with a soft cream cheese. Season with paprika, chopped pimiento, chopped green sweet pepper, and mix with cream or mayonnaise dressing. Smooth even with a knife. Chill. Serve with salad.

Frozen Cheese and Prune Salad

1 package cream cheese
½ cup prune pulp
1 teaspoon lemon juice
½ cup cream, whipped

Cream the cheese and combine with the whipped cream. Add lemon juice to the prune pulp and fold into the cream. Pour into a chilling tray and freeze. Cut into squares and serve on crisp lettuce. Top with mayonnaise.

Cucumber Salad

Remove the peeling from a large cucumber, and score the edges so as to make it have a rough appearance. Cut into crosswise sections and remove the seeds. Mash a package of cream cheese until smooth and season with salt and pepper, and add one finely cut pimiento. Pack the center of the cucumber sections with the cheese. Chill in the refrigerator. When ready to serve, cut thin slices of the cucumber rings and serve on crisp lettuce with French dressing.

Strawberry Sherbet

¾ cup sugar
1½ cups water

Boil the sugar and water for ten minutes. Then add three tablespoons of strawberry fruit flavored gelatine, or one tablespoon plain gelatine. When cool, add the juice of one lemon and a cup and a half of strawberry pulp. Place this in a chilling tray, and when quite cold, pour slowly into the stiffly beaten whites of two eggs. Add only a little at a time, and continue beating until all is added. Pour the mixture back into the tray and freeze. If egg whites come to the top after it has been in the refrigerator for an hour, stir occasionally.

Raspberry Whip

1 cup raspberry pulp
2 tablespoons lemon juice
⅛ teaspoon cream tartar
1 cup 4X sugar
1 egg white

Add the cream tartar to the egg white and beat until quite stiff. Then add the sugar, and gradually add the lemon juice and raspberry pulp. Pour into a tray and chill. When ready to serve, arrange little cakes around the sherbet glasses and fill with the whip. A sprig of mint stuck in the top makes a pretty garnish.

Fruit Punch

Juice of 3 oranges
Juice of 6 lemons
2 cups mixed fruit juice
1 cup seeded cherries
1 cup sugar
2 cups water

Boil the sugar and water for fr minutes. Cool and add to the fru juices. Pour two cups of boiling wate over the rinds of the lemons and orange and let set until cold. Then add to th fruit juice. When ready to serve, pou into punch bowl, which is filled wit colored ice cubes.

SYNTHETIC

Snow Ingeniously Used For Cooling Food

ALBERT PICK-BARTH COMPANY, Inc., Chicago, Ill., have just introduced the "Dri-Kold" Food Service," which utilizes the cooling medium, synthetic snow. It incorporates a device called the Dri-Kold compression unit which centralizes a chemically treated carbon dioxide gas and turns the gas into snow under a pressure of 175 lbs. to the square inch.

The cold service of all varieties of hors d'oeuvres, relishes, cocktails, salads, desserts and beverages, especially when any time elapses between the preparation and actual service of them, has always presented a problem. A need has always existed for a method of serving which would keep such foods in perfect condition until finally received by the patron, and which would also be more convenient in use.

For example, if refrigeration is required for any service, a silver, bell-shaped cover of a special patented design is fitted on a Dri-Kold Snow Press. This cover has a small inner compartment at the top, and as the chemically treated gas is put under pressure, snow results and this compartment is filled. After the cover contains a sufficient quantity of snow, the food service is placed under it and delivered to its destination in a refrigerated condition. The outer surface of the cover becomes coated with frost during the filling process and adds an unusual touch to the service.

The amount of snow placed in the silver cover is entirely dependent upon the individual requirements of the service being prepared. If the snow chamber is completely filled, there is sufficient refrigeration for one hour, the temperature remaining over 100 degrees below zero. This feature is particularly desirable in places where services are turned out rapidly, as in that case the same cover can be used repeatedly.

Albert Pick-Barth Company, Inc., control the manufacture and sale of Dri-Kold in the United States. It also finds a use with packaged foods, where the snow is deposited into a small cylindrical cartridge which, in turn, is placed next to the cartoned food, in an especially designed box. This is particularly suitable for carry-home packages of ice cream.

GERMAN IMPORTS

A NATION-WIDE effort, sponsored by the fruit importers to increase the per capita consumption of fresh fruit in Germany, is reported to the Foodstuffs Division as largely responsible for the increase in German fresh-fruit imports from $45,000,000 in 1926 to $71,000,000 in 1928.

Funds for the advertising campaign were raised by having German fresh-fruit importers and fresh-fruit exporters to Germany pay 0.007 cents on each box imported into the country during the year. Fruit wholesalers and retailers throughout the country were enrolled, the former for $5.00 and the latter for $1.25 a year.

The first year of the campaign about 1,000,000 display plaques and cards and cook-books were distributed direct by auto to retail and wholesale members. The slogan, "Eat More Fruit and You Will Stay Well," was adopted for the campaign. Radio broadcasting was utilized and fresh fruits were featured at booths at fairs. About 150 magazine articles on fresh fruits appeared during the second year of the campaign, and fruit-display contests were run during the third year.—*Domestic Commerce.*

COPELAND

Mt. Clemens, Mich.—Copeland Products, Inc., announces a new water cooler, to be known as Model EC, for city pressure use instead of bottle service. Necessity for the new model was due to the great number of prospects continually in the market for an inexpensive city pressure type water cooler. The new model is expected to meet with great favor among distributors and dealers who are concentrating actively on water cooling equipment sales. Deliveries will start June 10. The Model E cooler for bottle service will be continued.

SERVEL EQUIPMENT USED IN COLER CHAIN STORES

Youngstown, Ohio—Marx Company, Servel distributors, recently closed the largest refrigeration order ever placed in Youngstown with H. E. Coler, Inc. Coler own an extensive series of chain stores, and Servel equipment is being installed in all stores.

TEMPRITE

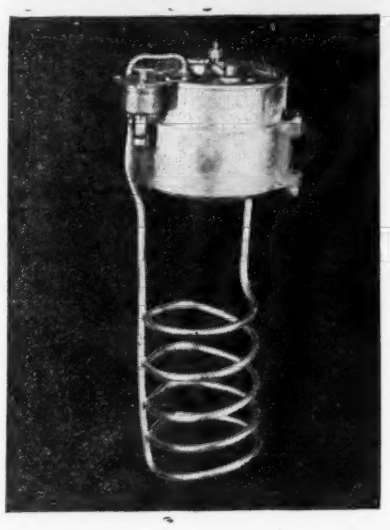
DURING the summer months, thousands of people throng the large Vernor's Ginger ale store at the foot of Woodward Ave., Detroit, for a glass of cold ginger ale. The fame of Vernor's ginger ale is city wide and is rapidly spreading to other cities in which the ale is being introduced.

The increasing demand for Vernor's ginger ale led the engineers of the James Vernor Co. into an extended search for some method of cooling the

ale dispensed from their new, compactly designed counter dispenser; so that wherever Vernor's was sold in outlying suburbs, it would be properly cooled.

During the later part of 1929, the Liquid Cooler Corporation, Detroit, in conjunction with Vernor's engineer, designed a special Temprite cooler that could be installed directly in the new style counter dispenser, approximately 2 ft. high and 10 in. in diameter.

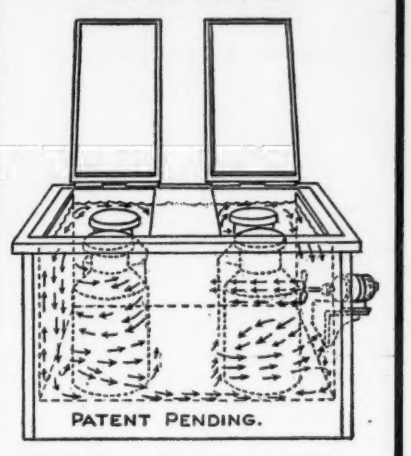
Several interesting refrigeration problems were encountered and overcome in this combination of dispensing and cooling unit. The Temprite cooling unit allows this beverage manufacturer to dispense ginger ale under ideal conditions. The unit has a capacity of five



8 ounce glasses, to the minute, continuously, with exit temperatures always under 40°. The first glass drawn after an idle period is drawn at 35°, thus counteracting the effect of a warm dispensing faucet and glass. The standard method of hook-up is by duplexing with the existing compressor.

The Vernor company anticipates installing thousands of these units.

THE NAGLE WHIRLPOOL MILK COOLER



REDUCES THE COOLING TIME

Write for Specifications and Prices.

Manufactured by

NAGLE SHEET METAL WORKS

HERKIMER, N. Y.

This is a National Message to the American Housewife

Get the most out of your ELECTRIC, GAS *or* ICE *Refrigerator*

Send $1.00 for the two big 50c rolls (West of Missouri and South Coast States 60c per roll, both for $1.20 postpaid).
FREE: When ordering mention this ad for a Miracle Paper Dish Rag and interesting samples for You and Your Friends.

YOUR refrigerator will serve exactly and according to intelligent use and operation, and your palatable, health building foods will speak for themselves when served.

Are you using both KVP Refrigerator Papers? Try the famous pair—Heavy Waxed Paper in "Cutter Box"—it seals tight (one sheet will do) keeps the moisture in or keeps the moisture out as desired. However, remember all foods should not be wrapped in Waxed Paper—for 100% results you also need KVP Household Parchment, the waterproof paper for cooking and for wrapping all moist, greasy and wet foods—a cheesecloth substitute (you can boil it) like a rag when wet—use it again and again—it wears.

Try your Grocer, Stationer, Hardware, Department Store and Naborhood Merchant first; if they cannot serve you KVP will pay the parcel post.

KVP STANDS FOR "THE WORLD'S MODEL PAPER MILL"
KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO MICHIGAN U.S.A.
MANUFACTURING WORLD-WIDE FAMOUS FOOD PROTECTION PAPERS

IF you are in any way interested in Electric or Gas Refrigeration ...read the above over twice because it will mean much to you. .. this is our National message to the American Housewife in cooperation with your refrigerator sales campaigns. Write for samples and advertising ideas that sell your refrigerators to new customers and keep old customers interested

Chromatic Cases

THAT color is to be the dominating note in modern refrigerator design is the belief advanced by the Gruendler Refrigerator Company Division of the Allied Store Utilities of St. Louis in announcing its new line recently.

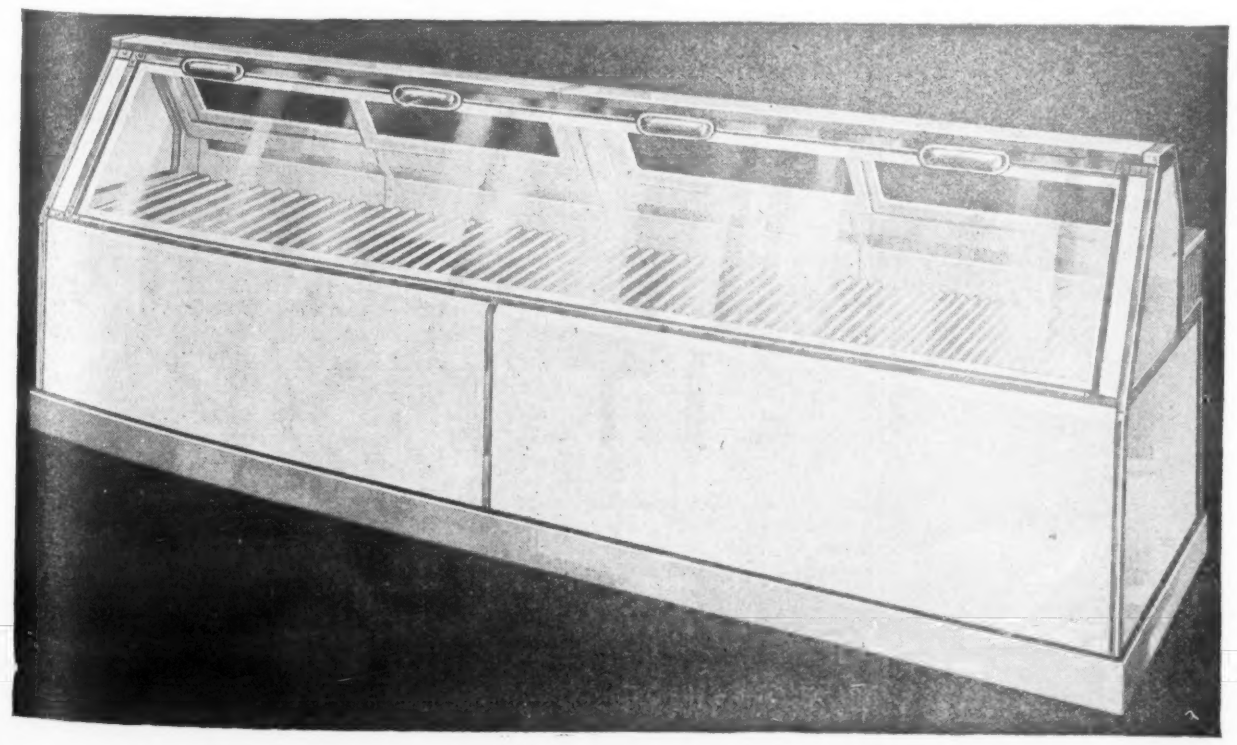
Gruendler, long a pioneer in the commercial refrigeration field, is taking this forward step in line with its policy of keeping its equipment modern in every respect. The principles of Gruendler refrigerators have not been changed, but new lines and designs have been embodied in construction by Gruendler engineers.

"The housewife of today has a greater appreciation of color as applied to her surroundings," said G. H. Gruendler, Jr. "She has redecorated her home and its equipment to conform to various color schemes. She is even going a step farther by insisting that harmonious color effects are in force not only where she lives, but in all the stores where she shops as well."

"Heretofore, butcher shops and meat departments have been rather drab affairs, improved only by the introduction of white enamel, which in turn is being improved by touches of harmonious color. Not only is there an additional buying appeal through the use of color in display equipment, but there is also the continuance of the suggestion of absolute sanitation, which is by no means confined to white alone."

In the new Gruendler line which is now in production, a green vitreous base has been made a part of all refrigerators. Numerous models are available in two tone green effects as well as in plain white with the green base. These new models have vitreous enamel panels, fused on pure steel. Monel metal trim, adding a further touch of attractiveness, is used throughout. The model pictured is the No. 1211 top display case.

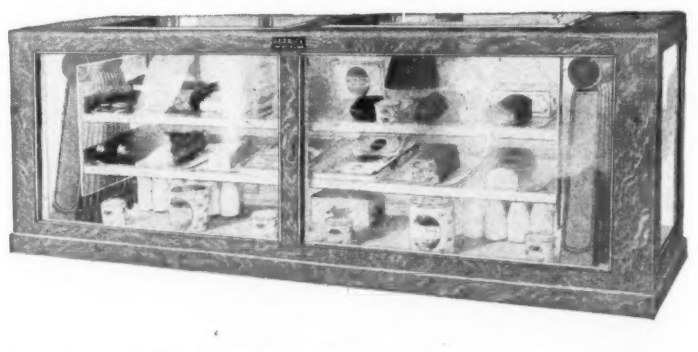
Indications are that these new models will reach a sales total which will eclipse any previous record. Gruendler offers every type of commercial refrigerator, including a variety of designs of display cases, grocery boxes, delicatessen cases and coolers.



One of the New Gruendler Models with Green Vitreous Base

A Best Seller

Among Grocers and Markets



HERRICK

FULL VISION CASE

The HERRICK Full Vision Case is a best seller for you because it increases sales for the users. In offering the HERRICK Full Vision Case you are not merely offering a refrigerator—you are offering increased sales. It is so good a salesman for the user that it virtually sells itself for you.

It is designed to sell foods by displaying them well. Coils are at ends, allowing maximum display space. It is easy to see all the food displayed and shelf arrangement makes for most tempting display.

Foods placed in this case are **protected.** Temperatures are maintained that insure freshness. Dust, flies and undesirable handling are eliminated by the airtight construction.

Other HERRICK models, suitable for use in hotel and restaurant kitchens, in hospitals, clubs and other institutions, constructed for use with mechanical refrigeration, give you a full line to meet all needs. Write for complete catalog of commercial models.

HERRICK REFRIGERATOR CO.
1008 WATER STREET
WATERLOO, IOWA